

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVIII.

SATURDAY, JUNE 20, 1891.

No. 25.

ORIGINAL ARTICLES.

RARE COMPLICATIONS OF TYPHOID FEVER.

BY H. A. HARE, M.D.,

PROFESSOR OF THERAPEUTICS AND MATERIA MEDICA IN THE JEFFERSON
MEDICAL COLLEGE OF PHILADELPHIA; PHYSICIAN TO
ST. AGNES HOSPITAL,

AND

ARTHUR J. PATEK,

STUDENT OF MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA.

WHILE we are aware that the general subject of typhoid fever is one about which little that is new can be said, in view of the host of able contributions which have already been made, we have thought that some peculiar phases of this common disease which we have encountered during the past few weeks were sufficiently unusual to warrant a report, both interesting from a clinical point of view and useful by reason of the addition made to the statistics regarding the complications of enteric fever.

The first cases of which we shall speak presented acute mania ushering in the attack. The histories are as follows:

Annie M., aged twenty-four years, was admitted to St. Agnes Hospital, March 18, 1891. She had been feeling badly for some time, but until four days previously had been able to do her work. On the 14th she had severe headache, vomited a little, suffered from pain in the stomach, and had some diarrhoea, these symptoms being followed on the subsequent day by not very profuse epistaxis. She walked a considerable distance to the hospital, and on her admission at 10 P.M. her temperature was found to be 105°. The resident physician found that her tongue was thickly coated, dry and brown. On the next day, when seen by us in the wards, the tongue was unusually clean, even for that of a healthy person. The patient was delirious, and so violent that it required four or five persons to keep her in bed. The temperature, after an unusually prolonged and severe struggle, was found to be 106°. At this time every symptom of typhoid fever was completely masked by the mania. The bowels were moved, and the passages were of *normal consistency and color*. The urine was somewhat scanty and high-colored, and the pulse full and strong. There were no rose spots or other enteric symptoms. At the end of twenty-four hours the patient, still being in a condition of wild mania, was removed to a cell, the impression being that it might be a case of hysterical mania with hyperpyrexia. Twenty-four hours later the mania had disappeared, and the typhoid symptoms once more reasserted themselves; the

delirium became more quiet and muttering, and she was taken back to the wards. During the following week she was constantly delirious, and frequently maniacal, although there would be short momentary intervals of sanity. During this time a large number of rose spots appeared on the abdomen and chest, the tongue became heavily and typically furred, the temperature followed a characteristic course, the typhoid odor was present, and an occasional nose-bleed helped to confirm the diagnosis of typhoid fever. The patient rapidly became worse, and died thirteen days after admission, without becoming sane, except for the brief intervals named.

The second case is as follows:

Mr. A., living in Milwaukee, aged thirty-four years; married; one child. A sister died of convulsions, of unknown nature, but a short time before the onset of his illness. Family history otherwise negative. At the age of seventeen the patient, according to the statement of his physician, had an attack of typhoid fever, attended with as much, if not more, delirious excitement than this, the second attack. The history of the case begins with the circumstance that Mr. A. was nursing his wife, who was down with a mild attack of typhoid. The patient's first complaint was of headache and insomnia. The visiting physician, seeing him on the following day, ordered him to bed, recognizing the case as one of typhoid fever, rather because of the existence of a like case in the same house and from the mere complaint of malaise, than from any symptoms particularly characteristic of the disease. The patient obeyed the instructions of the physician, and went to bed, still complaining of insomnia. Hardly had he fallen into mild slumber when, not more than an hour later, he suddenly awoke, delirious, and grew steadily more so. During the following night he became maniacal, rushed to the room of the nurse (she had been procured since the husband's illness), burst open the door, threw the nurse to the floor, and assaulted her in a most violent manner, kicking and striking her, and accusing her of wishing to harm his wife and child. The nurse finally managed to escape, and ran for the physician, who lived across the street. In the meantime the patient jumped through a window leading to a small balcony over the front portico, and leaped to the ground, where he was found a few moments later by the physician. Strange to say, the man suffered little injury, being slightly bruised by the fall, and somewhat cut by the glass; but stranger still was the fact that he was now quite rational, telling the physician all that had transpired, and what he had done. The patient was again put to bed, now apparently quite comfortable. The physician left him to see the wife in an adjoining room. Hardly, however, had he gone

when Mr. A. suddenly sprang from the bed, rushed into the kitchen, where he seized a large knife, and then rushed back, bent upon assaulting the physician. He was, however, overpowered, and again forced to bed. He now rested comfortably, and when seen the following day was doing well. That evening a condition of hyperpyrexia suddenly intervened, and in a few hours the patient was dead.

The interesting features of these cases are that the enteric fever was ushered in by mania. As is well known, it is not uncommon for typhoid fever to be followed by nervous or mental disorders of a more or less persistent character, but it is exceedingly rare for the attack to begin as it did in the cases here reported. Liebermeister, in his article on typhoid fever in Ziemssen's *Cyclopadia*, states that it is by no means rare to see psychical disturbances which do not depend upon any demonstrable lesion, and which generally are of favorable prognosis. In these cases, however, the mental disorder is a *sequela*, not an early symptom, and the condition is to be separated from ordinary delirium. Although Liebermeister gives no statistics as to these complications, and makes little reference to cases such as we have described, he uses these words:

"At the height of the disease, however, the development of such symptoms, or of any uncommon brain symptoms, must be looked upon with alarm." In Hutchinson's article in Pepper's *System of Medicine*, post-typhoid mania is fully discussed, but nothing is said of pre-typhoid mania. Niemeyer does not mention such a complication.

The following cases, which we have found in the literature of the subject, are of interest. Murchison¹ reports the case of a German who was much excited over the Franco-Prussian War. After about four days of discomfort and malaise, he suddenly passed into a state of acute maniacal delirium, requiring two men to control him. There was an absolute refusal of food, a temperature of 102°, with a dry tongue and rapid pulse, slight diarrhoea, and no spots. The patient was subdued by large doses of chloral, and the fever ran its course. The same author also states that in several instances he has known acute mania to develop on the first day of an enteric fever, and that under these circumstances the case is very apt to be mistaken for insanity.

J. C. Wilson² asserts that delirium may be an early symptom of enteric fever, and quotes Riberalba, who reported four cases which were delirious on admission to the hospital. Louis saw two cases which were delirious on the first night of their illness. Britowe has also reported a case in which maniacal delirium existed on the second day. Mottet mentions an instance of typhoid fever complicated with mania

to such a marked extent that the patient was placed in an asylum before the true nature of the ailment was discovered, and Henrot and Bucquoy have seen the disease ushered in with the delirium of grandeur. Finally, Daly³ records an instance in which aggressive mania came on on the fifth day, following a condition of stupor.

From a careful examination of a large amount of literature, we are convinced that the prodromal mania in enteric fever is most rare and, when it occurs, is almost always fatal, while the mania which is in the nature of a sequela may be looked upon as devoid of immediate or remote danger to mind or body. We have also asked a large number of physicians as to their experience, but the reply has been that they have never met with pre-typhoid mania.

Passing from the consideration of this complication, let us call attention to a much more common, but still a rare, accident in the course of this disease. We refer to *erysipelas*. According to Liebermeister (loc. cit.), this complication occurs generally during convalescence and *seldom at the height* of the disease, and this writer also believes it may be a dangerous factor. In 1420 cases of typhoid fever in Basle, erysipelas appeared ten times, and all of the ten recovered. These were all cases of facial erysipelas. Two others developed the disease about bed-sores. In other words, erysipelas occurred in a little less than 1 per cent. of these cases. Griesinger⁴ states that it occurs in about 2 per cent.

The following cases occurred within a period of six weeks of each other in the wards of St. Agnes Hospital. The first was separated from the second by an interval of five weeks, and the second from the third by less than a week. They were all in the same ward, but occupied beds at least twenty feet apart. The first case is as follows:

Maggie T., aged twenty-two years, was admitted December 16, 1890, with a history of chronic suppurative of the middle ear. She was treated at the dispensary and rapidly improved, being discharged on December 23d. On January 8, 1891, she was readmitted with well-defined symptoms of a mild attack of typhoid fever, which ran a short course, the patient being discharged on January 30th. On February 2d she entered the house, complaining of pain in the abdominal region and in the knees and elbows; the pains were not very severe, but the joints were somewhat swollen; the tongue was brown and dry, and all the symptoms, such as the stools, the rose-colored spots, the characteristic temperature and appearance of the patient, pointed to a second attack of typhoid fever, although at first the case was treated as one of rheumatism. The temperature did not exceed 103°, and the patient

¹ Lancet, 1870, ii. p. 807.

² Philadelphia Medical Times, 1884-85, xv. 577-581.

³ THE MEDICAL NEWS, 1882, xl. p. 68.

⁴ Infektionskrankheiten.

went through a moderately severe attack of typhoid fever without complication, except for very marked enlargement of the glands of the neck, which was relieved very promptly by the use of an ice-collar. On March 5th a well-defined erysipelatous swelling appeared over the left side of the face, about the temples and malar bone, and gradually extended over the entire face and part of the scalp. The eyes were completely closed, and the lips very much swollen. The mouth was very painful, being covered with sordes to such an extent that it was impossible for the tongue to be protruded, and it was almost impossible for food to be taken. The throat was very dry, and a spray of listerine was used as a mouth-wash. The ordinary treatment for typhoid fever was at once withdrawn, and the patient was put on 30 drops of the tincture of chloride of iron, three times a day. Under this treatment she improved, and by March 16th all inflammation had entirely disappeared, leaving only some swelling, which, in the course of the next two weeks, entirely passed away. The patient during this time continued to manifest symptoms of typhoid fever and was unable to leave her bed on account of this disease for three weeks after the erysipelas had disappeared. Total recovery eventually took place.

The second case was that of A. E., a female aged twenty, who was admitted to the wards with all the early symptoms of enteric fever, which developed into a moderately severe attack, but was without any extraordinarily severe symptoms. It was estimated that at the time the erysipelas developed she was in the third week of the typhoid fever. At the onset of the erysipelas there was a chill, followed by a rise of temperature of 2° , and followed, after the use of a cold bath, by a fall to the temperature course previously pursued. The erysipelas began about the bridge of the nose and extended rapidly over the entire face back to the ears and to the margin of the hair, whence it ceased to spread. The eyes were closed and the lips much swollen. An examination of the serum withdrawn by a lancet showed the characteristic streptococci of erysipelas. Under the use of large doses of tincture of the chloride of iron and an application of ichthyol ointment, recovery rapidly took place. The mouth was unusually foul and dry, but no delirium was present. We could not notice that the complication in any way increased the gravity of the case.

The third case is as follows: A woman, aged nineteen, a Swede, was admitted in the early stages of typhoid, which ran a mild course, devoid of delirium or any symptoms of importance, except that on an afternoon about the middle of the third week of her illness she developed a sudden rise of temperature to 104° , followed at once, on the use of cold bathing, by a fall to 98° , with loss of the pulse at both wrists. As a precautionary measure, she was treated as if suffering from intestinal hæmorrhage, and soon rallied, developing during the next twelve hours a typical patch of erysipelas on the right side of the nose and over the malar bone. There was no further disturbance of the typhoid temperature, and the disease remained limited to

that side of the face. The patient was treated with iron and ichthyol.

By far the most exhaustive study which we have found concerning erysipelas as a complication of typhoid fever is that of Gerente.¹ According to this authority, the complication comes on in one of every sixty-one cases, which would give a much higher percentage than that of Liebermeister or Griesinger. Gerente states that females are more commonly affected than males, which is a curious fact, because males are more exposed and more frequently have typhoid fever. In regard to the period of the disease at which erysipelas, as a rule, appears, Gerente states that it is generally after the twenty-first day, and he also believes that some epidemics of typhoid are peculiarly liable to this complication. The following conclusions of Gerente, however, embody most of his statements:

1. Erysipelas of the face is rarely met with during the course of typhoid fever. I have found it in 64 out of 3910 cases, which is about 1 to 61. These figures are derived from the following statistics:

	Typhoid Fever. Cases.	Erysipelas. Cases.
Chomel	130	4
Louis	134	3
Forget	92	1
Jenner	65	2
De Larroque	105	4
Zuelzer	84	3
Liebermeister	1420	10
Zuccarini	480	18
Griesinger	500	10
Murchison ¹	900	9
	3910	64

2. Outside of the question of contagion, it appears to be most frequent in the grave, adynamic forms of typhoid and in those of long duration; it appears to be most frequent in lymphatic subjects.

3. While observed at all the stages of typhoid fever, erysipelas shows itself especially and almost exclusively during the last period and during convalescence.

4. Under these circumstances erysipelas produces a marked amelioration in the general as well as in the local symptoms.

5. The appearance of facial erysipelas in the course of typhoid fever is of grave prognosis (16 deaths out of 36 cases); this gravity lies less in the erysipelas, which most frequently is benign in itself, than in the poor general condition of the patient, the secondary infection being an indication of this condition.

6. The complication consists in a simple coinci-

¹ Thèse de l'École de Médecine, 1883-84, t. i.

² The number of Murchison's cases is not strictly correct.

dence favored by debility, the result of the primary and principal disease.

We think the statement that erysipelas seriously influences the prognosis in all cases too sweeping. Thus, there are cases on record in which the onset of the acute disease has not in any way retarded convalescence. If the disease becomes phlegmonous, the prognosis is, of course, very grave, but if the inflammation is capable of undergoing resolution the prognosis is good.

The question as to the path by which the contagion finds entrance has been much discussed, but the opinion of Griesinger is generally accepted. He believes that the germs gain entrance by means of the inflammation of the frontal or sphenoidal sinuses, and also when ulceration of the buccal mucous membranes exists. Zuelzer also points out that in his own cases and in those of Zuccarini the erysipelas started in the stomatitic spots and ulcerations in the mouth.

In all our cases the patients complained very much, both before and after the attack of erysipelas, of the soreness of their mouths.

The following cases which have been reported in addition to the three of Gerente are interesting:

Armieux¹ reports the case of a soldier, in whom typhoid symptoms set in on September 18, 1881, with pain in the head, vertigo, abdominal tenderness, pain in the right iliac fossa, and an elevated temperature. On October 4th, a complication arose in an otorrhœa, which, by the 22d, was growing steadily worse, so that the patient's condition was critical. Now, facial erysipelas made its appearance, beginning in the auditory canal. Early in November osteitis of the humerus set in, and the patient died on the 9th of November.

Thielman² reports the case of a man, aged thirty, brought into the hospital in an unconscious condition. The right ear, eyelids, nose, greater part of the face and forehead were covered with an erysipelatous eruption. The tongue was dry and brown, there was pain in ileo-cæcal region, and the liver was painful and enlarged. The fever was recognized as typhoid and the patient put upon calomel. The patient was in a delirious condition, but on the following day there was a slight remission, and he became partly conscious. The erysipelas was seen to be spreading further over the face, but leaving its original seat. There was delirium the following night and semi-consciousness. Desquamation set in on the right side of the face, the eruption extending on the left. The pulse grew stronger, but the tongue was still brown in the centre. The patient was noticed to be troubled with occasional cough, and the respirations were somewhat more frequent. Examination showed a hypostatic congestion of the lungs. The condition became critical, but was re-

lieved, and the patient gradually improved, being dismissed as cured on the thirty-fifth day after admission.

M. Berthoud³ reports the case of a soldier who had typhoid fever of a meningeal type. The typhoid fever was declining, but convalescence was tardy, and his general condition was unsatisfactory. At this time the scrotum became tumefied and red, the redness spreading to the inguinal regions, while the general condition became very poor. The scrotum was triple its natural size, red, moderately warm, tender, not very painful, but cedematous, the redness extending to the right and left inguinal regions, as far as anterior superior spinous process, and also to the internal aspect of the thigh. The skin in these parts was swollen but soft, and the color persisted on pressure. On the next day there was no amelioration of the symptoms, but a very small area of necrosis appeared on the scrotum, which was treated by the application of the cautery. On the following day the necrosis seemed to be arrested and the scrotum reduced in size. The general condition, however, remained alarming. Six days later the patient died, after a subdelirium of four hours. The autopsy showed that the iliac and renal veins were involved in a plastic and suppurative inflammation, a case of erysipelas of the veins. The conclusion reached is that the redness of the skin and infiltration were due purely to mechanical causes, viz.: the stagnation of blood.

Freudenberger⁴ has recorded two cases, in one of which erysipelas appeared suddenly on both ears in the course of typhoid fever, without unfavorable symptoms. On the following day a chill and rapid advance of the disease took place. The typhoid fever was now considered as declining, but the prognosis grave, because of the erysipelas. In the second case facial erysipelas suddenly appeared during convalescence from typhoid fever, although the temperature was already quite low. The fever became high again, but was easily influenced by antipyretics. The pulse was 140.

Potain⁵ reports a case of erysipelas coming on during convalescence from typhoid fever, which was accompanied by a severe chill and fever. The erysipelas began in the pharynx and palate and did not affect the tonsils. On the next day the inflammation appeared at the corners of the mouth and on the face.

Finally, Martinez⁶ reports the following cases:

A girl, twenty years of age, belonging to the lower class, of lymphatic temperament, with very irregular menstruation, which was often almost absent, was taken ill with typhoid fever. The symptoms were obscure at the onset of the disease, but the most prominent manifestation was an erysipelatous inflammation of foot and leg. On the fourth day the erysipelas was marked, there was great fever, cephalalgia, and other typhoid symptoms, such as

¹ Rev. Méd. de Toulouse, 1875, ix. 42.

² Med. Jahresbuch v. Peter-Paul Hosp. in St. Petersburg. (1840, 1841), 142-147.

³ Gaz. des Hôp. de Par., 1848, vol. v. p. 29.

⁴ Aertzl. Intelligenzblatt. München, 1880, xxvii. p. 37.

⁵ "Erysipèle de la Face consécutif à la Fièvre typhoïde." Gaz. des Hôp. de Paris, 1880, lili. p. 1106.

⁶ La España Médica, Madrid, March 1, 1860, p. 135.

weakness, gurgling in the right iliac fossa, dryness and tremblings of the tongue, sordes on teeth; great stupor, delirium, and a frequent and small pulse. Death took place after some days.

Whether the erysipelatous trouble had anything to do with the causation of the typhoid symptoms or not Martinez does not state, but he mentions the case of another woman in whom an extensive erysipelatous inflammation of the face and scalp produced cerebral symptoms, fever, etc., but they were not so pronounced as to be confounded with those caused by true typhoid fever, as in the present instance. In this case the patient recovered.

SIMPLE MELANCHOLIA AND ITS TREATMENT.¹

BY A. B. RICHARDSON, M.D.,

LATE MEDICAL SUPERINTENDENT, ASYLUM FOR THE INSANE,
ATHENS, OHIO.

MELANCHOLIA is mental pain. It is a condition of emotional depression. It is the antithesis psychically of mania and emotional exaltation. Not all conditions of emotional depression, however, are melancholia, nor does melancholia include all forms of mental pain. "Man is prone to evil as the sparks fly upward" and evil brings pain. It is only when mental pain exists without adequate cause, or when the degree in which it exists is out of proportion to the exciting cause, that it can be called melancholia. Melancholy is physiological; melancholia is pathological. Both are mental pain—the one has a physiologically justifiable origin; the other is always dependent upon disease.

Melancholia is the simplest form of mental disease. It is the usual form of mental disease in the incipient stage, though this stage may be very brief, and is often known to none but the unhappy victim. Melancholia shades off into melancholy by imperceptible gradations, and the dividing line between them is often ill-defined and uncertain. The first indications of mental disease are usually only removed from the normal mental functions in slight degree, and are usually such as are consciously recognized by the patient himself. This recognition and the accompanying anxiety give rise to a feeling of depression which can justly be called melancholy in the first instance, but which usually has or soon acquires some of the elements of the pathological form. In many instances this stage of primary depression is only transitory, and as the consciousness of the patient becomes more disturbed he passes rapidly into a condition of exaltation. In others, however, the depression only deepens as the disease extends its limits and the mental pain becomes more intense and more irra-

tional—more out of proportion to any possible justifiable cause.

In its incipient stages melancholia is usually simple; that is, a simple emotional depression without well-formed delusions. I have seen cases, however, in which the first symptoms noted by others than the patient himself were hallucinations of some special sense and the resultant delusion of persecution or of a pursuing foe. Simple melancholia may exist as such for a considerable time, without progressing into the forms pathologically and symptomatologically further removed from melancholy, but as a rule the progression into some one of these forms is somewhat rapid and does not occupy more than a few weeks. Even in the simplest forms we see the tendency to the development of delusive ideas. There is an ill-defined impression of impending evil, a subjective sensation of weakness, want of self-confidence, a sense of unworthiness, and a disposition to become irritated by trifles, to be annoyed and disappointed by insignificant occurrences, often rapidly following delusions of threatening want or of loss of family, of the commission of the unpardonable sin, of eternal condemnation, or of persecution by general or specific enemies. There is no other form of mental disorder so insidious in development or so delusive as to its terrible consequences and results.

The chief symptom of melancholia is the disorder of consciousness. There is a diminished intensity of the object-consciousness and a heightened subject-consciousness. The patient loses interest in business affairs, neglects obligations and the ties of family, and is occupied more and more with the subjective sensations and impressions of impending evil. The former is the negative aspect of the disease, while the latter is its active phase. Melancholia cannot be said in every instance to be a form of insanity, though it usually is. There are cases in the incipency of which there is an ill-defined feeling of depression which overpowers the patient, of which he is fully conscious, but against which he is powerless to offer any resistance. Griesinger (*Mental Diseases*, p. 210) says of this form: "The melancholia which precedes insanity is distinguished from the mental pain which is experienced by healthy persons by its excessive degree; by its more than ordinary protraction; by its becoming more and more independent of external influence, and by the other accessory affections which accompany it."

With the disorder of consciousness which accompanies the more advanced stages, there is a coloring of Nature which affects the whole environment of the patient. This emotional state gives a dark and gloomy interpretation to all about him. He sees everything from an unfavorable standpoint.

¹ Read before the Southwestern Ohio Medical Society, at its semi-annual meeting, April 3, 1891.

For him all Nature is unpropitious and wears her darkest frowns. There is a difficulty in concentrating the attention on anything external to himself without unusual effort, and "there is a want of vigor in the representation of the environment" (Bevan Lewis, *Mental Diseases*, p. 117). As the same author also expresses it, in the same connection, "there is a state of cerebral torpor in the physical substrata of object-consciousness and a state of cerebral irritation in the physical substratum of subject-consciousness."

Melancholia assumes different forms in different individuals. The causes for this variation, I imagine, are about as follows: (1) the varying influence of individual cerebral structure and the resultant individual temperament; (2) the extent of the diseased process; and (3) the varying implication of the different parts of the cerebral structure. As has been already stated, that form which is least removed from physiological depression is simple melancholia. The physical disorder is least advanced in these cases; it is less extensive and the prospect of recovery is much better. Nearly all cases of the simple form recover, if discreet treatment is commenced in time. In those cases, however, in which the simple form is but a transitory stage in the development of the more severe varieties, the prognosis is less favorable, and the results of treatment more unfavorable.

The first symptom is usually an irremediable fatigue, a tired feeling, which is not removed by the periodical rest which the individual formerly found sufficient. There is a jaded feeling, and it requires a constant effort to keep the attention fixed on the subject in hand. The affections also become changed; there is no pleasure in family or friends; courage is lessened; there is greater irritability; more impatience at restraint, and religious belief even brings little solace. Sexual desire is lessened and the ability to gratify it diminished; the appetite is dulled, and there is often an uncomfortable feeling after eating. The bowels are usually constipated, the tongue coated, and the various secretions diminished in quantity. Sleep is usually disturbed, and insomnia is often one of the early and most troublesome symptoms. If these indications are heeded, and rest, change of scene, freedom from causes of worry, and nutritious food in abundance are secured, improvement usually begins in a few weeks or months, and continues until the former state of health has been restored. If these steps are not taken, the condition has a tendency to progress and develop into the more severe forms. In some cases this primary stage is transitory, and in spite of treatment the disease rapidly progresses into the more permanent and more serious varieties. The symptoms then become more severe; the dis-

turbance of health is more pronounced; the reason is more in abeyance or more perverted. The morbid fancies gradually become more fixed and more clearly defined. Gloomy fears pervade the mind. The thoughts are fixed on self and with the rise in intensity of subject-consciousness there is a fading out of the normal significance and importance of the outside world. In many cases there is increasing suspicion, and evil is ascribed to the action of everyone. In some instances there is a remarkable paralysis of volition, and hours may be consumed in forming a determination to execute the simplest and most unimportant duties. The memory is usually not much impaired, but there is great difficulty in controlling and concentrating the attention. Suggestions of suicide, as a relief from the horrors of the situation, are frequent. They should be constantly borne in mind, and their presence suspected in every case of depression. They are often present when least expression is given to them, and the silent determination is by far the most dangerous. The only safe rule to adopt is to view every melancholiac as a possible suicide, and to direct the treatment accordingly.

It is not my purpose to go into detail in the description of the more pronounced forms. It is with the disease in the incipient stage that the general practitioner has to deal, and its symptomatology and treatment are most important to him. As the delusive ideas become more fixed, they assume innumerable forms and, according to the conceptions of different authorities, give rise to many clinical varieties. A large group of delusions relates to the bodily functions; every possible as well as impossible form of bodily disease may be the subject of such a delusion. To cases of this class the name of *hypochondriacal melancholia* has been given. The delusions not infrequently have a basis in actual disease. Delusions concerning the stomach and bowels often have their origin in dyspeptic disorders or some organic abdominal disease. When the delusion has a more general character and is permanent, engrossing more or less completely the patient's thoughts, the condition is called *delusional melancholia*. When the motor functions are more prominently involved there is greater restlessness, and *motor melancholia* or *jactitating melancholia* is the name applied. If accompanied by mental excitement approaching delirium, the condition is called *frenzied* or *delirious melancholia*. If there is torpor of the intellectual functions, it is *stuporous melancholia*, and in marked cases *melancholia attonita* of the French; in the profounder disturbances of the motor functions there may be convulsive seizures giving rise to an *epileptiform* variety. Another variety which is sometimes mentioned is *organic*

melancholia, in which there is evidence of localized or gross organic lesion of the cerebral tissue, but it may well be doubted whether such a distinction is wise, for in reality all forms depend upon organic change of some kind in the cerebral tissue, at least for the time being.

The chief primary and determining cause of melancholia, that which gives direction to the diseased process, and also determines the character of the mental symptoms, is to be found in the peculiarities of the structural arrangement of the elements of the cerebral convolutions. The cells are more than ordinarily sensitive; that is, they respond more readily than usual to impressions. Their receptive capacity is increased beyond the average; the individual feels intensely; his affection-capacity is excessive. Comparatively slight causes produce marked variation in his emotional state. He passes from one extreme to another under slight exciting cause. There is also, more or less marked, a morbid temperament, which predisposes to mental pain; there is a weakened resistance and a tendency to lose the normal sense of well-being from slight causes, either from within or without. This temperament and this predisposition are strongly hereditary, and, according to some authorities, more so in the male sex from the mother, and in the female sex from the father.¹ In such cases there is also a tendency to depression after acute bodily diseases, fevers, pulmonary and cardiac affections. In such predisposed persons there is also often a want of proper adjustment among the mental faculties. They are, on the other hand, sensitive, neurotic, sympathetic or melancholic, impressible, and with weakened resistance, yet possessed of such active energy, such ambition, or such strong volitional control that they keep the flagging powers in activity until the danger-point is reached, and a less ambitious individual or one of weaker volition would have heeded the warnings of Nature and have yielded to the demands of exhausted tissues. Though this is often the gift of genius, it is a dangerous power, and in its possession the safety of the mental autonomy is often jeopardized.

Of exciting causes it is unnecessary to speak further than to say that they are as various as the evils to which flesh is heir. They are such as directly produce exhaustion of the cerebral elements by undue drain upon their resources, or interfere with their proper nutrition. Pathological depression is rare in well-nourished brains. Perversion of nutrition is the rule. The sources of this perversion or interference are three-fold. There may be such disease of the bloodvessels as incapacitates them

for the proper performance of their functions, and starvation of the cells thereby results; or the nutritive elements of the blood may be deficient in quantity and quality; or lastly the blood may carry to the cells material which acts as a poison to them, and thus destroys their energizing capacity. Whatever the cause, the actual result is that the cerebral cells are impoverished and are thrown into disorder because of their poverty. It may be that their reparative power is naturally deficient, and that a comparatively slight burden is sufficient to exhaust them. Some types of brain-cells are essentially short-lived and have but little reserve power. They are constantly put upon the strain by their everyday routine of work, and any slight excess may result in disaster to them.

While there is occasionally some difficulty in diagnosing the existence of melancholia, because it shades off so imperceptibly into mere depression, it is a form of mental disorder in which the symptoms cannot long remain concealed. There is usually less difficulty in the examination of such a patient than in many other varieties of insanity. The patient is nearly always conscious that he is not well, and will admit the fact. His description of his symptoms is usually a reliable guide to the discovery of his mental derangement, but he almost invariably attributes them to erroneous causes. There is seldom much difficulty in getting the patient to talk, and in the examination of the insane one of the most valuable qualifications is to be a good listener. Let the patient do the talking, and, as far as possible, confine your own remarks to such as will draw out his peculiarities. There are usually some physical symptoms which are valuable aids in diagnosis. Digestive disorder is frequent. There is often loss of flesh, and there are the general evidences of impaired nutrition. Examine thoroughly for hallucinations and delusions. These always indicate a more serious malady, and one which is less likely to be transient. Hallucinations of smell are thought to be especially of unfavorable omen, and after them those of hearing. Delusions are unfavorable indications in proportion to their prominence and the degree in which they dominate the reasoning powers. Those of self-condemnation and future punishment are most likely to lead to suicidal attempts, while those of persecution and suspicion are more productive of homicidal outbreaks. All such delusions should be carefully noted, and the true significance attached to their presence. The profession is scarcely alive to its responsibilities in this regard. Take no risks. It is far better now and then to needlessly restrain a patient for a few weeks than to permit the continuance of the daily record of suicides and homicides from unheeded indications of danger with which

¹ Clouston: Mental Diseases.

the daily press now teems. It does not follow that hospital restraint is always required, but efficient means should be taken to secure the patient's safety, and if this cannot be done outside of a hospital, then to one he should go.

The pathology of melancholia in its earlier and simpler forms is not such as admits of satisfactory ocular demonstration. It is chiefly seen in perverted function and evidences of collateral physical disturbance. The essential feature in it is the impaired and perverted nutrition of the cells of the cerebral cortex. This may be primary, dependent upon causes which act directly upon the cells in modifying their molecular arrangement, by overstrain, or work of kind and quality beyond their capacity of safe performance; or secondary, produced by disease of other tissues or other organs, the healthy activity of which is necessary to their proper nutrition. This disease may be in the cerebral blood-vessels, in the digestive tract, in the liver, the kidneys, the lungs, the heart, or, in fact, to a greater or less degree in any tissue of the organism. Diseases of the digestive organs and of the cerebral vessels are the most frequent. The brain cells do not show the gross lesions of alcoholic insanity, parietic dementia, or of many other forms of mental disorder, nor is the destructive change so rapid. There are not the evidences of violent perturbations in the adjoining tissues, so usually found in maniacal states. For this reason melancholia offers a better prospect of improvement, after a prolonged continuance of the disordered state, than do most of the other forms of mental disorder. I have known a not small number of cases to recover completely, or nearly so, when the disease was of several years' duration.

The treatment of melancholia is a complex question, and cannot be stated in general terms. There is no disease in which the individuality is so dominating as in insanity. Every case is a separate study, and the treatment should be adjusted to the peculiarities found in each. The first consideration is usually that of safety. What has already been said in that connection will point the way. In every case have in view the possibility of suicidal or homicidal impulses, and search for them. If the depression is profound, or there are present delusions of persecution or self-condemnation, great care should be exercised in providing efficient supervision. Cases of the agitated form are less liable to such impulses, except in the rather rare cases in which this class of delusions is also present. Care should be taken in the apathetic form that such accidents do not happen, for the stupor and consequent silence may conceal dangerous delusions, which may unexpectedly give rise to dangerous impulses. Change of environment is advisable in nearly all cases.

This is more universally true than in cases of exaltation. The painful mental state in which the patient lives is connected largely with the circumstances of his environment and removal to new surroundings and the starting of new lines of mental activity thereby is an important condition of successful treatment. The particular nature of this change, the kind of selection which is made, must be determined by the situation and peculiarities in each case. In one, removal to a hospital may be best and the only thing practicable. In another, a stay in the country, removed from all forms of irritation, and with but little society other than the required nurses, may be most advantageous. In still other cases, the removal to busier surroundings and to a more active life may prove best. Changeable climates, with low barometer and moist atmosphere, are to be avoided. Tact should be used in selecting the proper kind of companions. Too much attention and too great a manifestation of sympathy may prove as injurious as neglect or harshness.

Having chosen the most favorable environment practicable, selected the most judicious companions available, and made certain that the safety of the patient is insured, the next consideration is the daily line of conduct which should be prescribed. Many of these patients have led sedentary lives and have neglected the cultivation of their muscular system. In such cases, carefully adjusted and methodical exercise of the muscular system will be of advantage. Walks in the open air, gymnastics, massage, baths with friction afterward, with a complete cessation of all mental activity as far as possible, constitute the proper regimen for these. Such treatment will tend to divert the blood-current to other regions, and thus relieve the passive congestion which is frequently the accompaniment of the impairment of nutrition of the brain-cells, and prevents the proper supply of healthy blood, while it also contributes to the enriching of that fluid by removing waste-products and stimulating the assimilative processes. In the motor forms, exercise is likely to be injurious, and rest and quiet should be secured instead. In all, any prodding of the mind to intellectual effort is to be discouraged and avoided. As the mind shows capacity for healthy exercise, it should be led into pleasant paths in which exercise will be amusement, and where, as far as possible, the mental landscape will be at variance with that which developed the depression and the melancholic fancies. All these are most important requisites to successful treatment; and a companion with tact, experience and the proper breadth of intelligence is worth more than all the articles of the *materia medica*.

After rest and properly regulated and selected exercise comes the question of nutrition. This is a broad field, and should be carefully studied in each

case. Clouston's "gospel of fatness" in these cases is of incalculable advantage. Encourage assimilation by every possible means. Give the most nutritious diet and in quantity as large as can be utilized by the system. Don't be afraid of the amount consumed. It cannot be too great. Stimulate the secretion of the digestive fluids. Carry off the waste products promptly and thoroughly, and then see that the brain is given the opportunity to utilize the material furnished it. Encourage sleep by every means within your power, and never curtail the amount. Remember that it is advantageous in proportion to its approach to the natural variety. The stupor of many narcotics, particularly in large doses, is not sleep, and gives the brain no opportunity to obtain nutritive supplies. This is the great purpose of sleep, and is not accomplished by simply creating a condition of unconsciousness by the circulation of a drug through the brain. Hypnotics are only of value to adjust the conditions and start the process, leaving Nature to perform the actual work. Use hypnotics sparingly and as a last resort. Remove as far as possible all the obstacles to natural sleep, and test first the influence of change of environment, new forces and new lines of mental activity. They will often work wonders, when, if hypnotics have been given, the effect is likely to be wrongly attributed to them, and their use continued to the detriment of the patient. Of the many in use, perhaps paraldehyde is the least depressing and the least injurious, though difficult to administer and most unpleasant. The bromides and cannabis indica are useful in the more active forms. In the very excited cases a combination of the alkaloids of hyoscyamus with morphine, given by preference hypodermatically, I have found invaluable in controlling the motor irritability and conducing to natural sleep. Chloral and sulphonal are usually too depressing in their after-effects to be of advantage. Strychnine, arsenic and phosphorus are of use, as the system can take care of them. Iron is often useful in anæmic states. The bowels should be kept freely open and stomachic tonics used judiciously. Remember that the brain is in direct communication with every portion of the animal economy, and that for its healthy action the condition of no other organ can be safely neglected.

A CASE OF PUERPERAL SEPTICÆMIA.

By JOHN T. BINKLEY, M.D.,
OF TACOMA, WASHINGTON.

ON February 22d, at 7 o'clock A.M., I was called to attend Mrs. B., aged thirty-six years. She had borne four children and had aborted four or five times by self-induction. She then desired another child, but, aborting twice from habit, she consulted me. I succeeded in carrying her through to term.

When I reached her bedside I found her in the first stages of labor, the os slightly dilated and soft, a head presentation, and every indication of an easy labor. I left the house, made a few calls, and returned at 9 o'clock. Pains were recurring a little more frequently, and the os was the size of a silver dollar. At 11.30 the os was well dilated and the head in the vagina. The pains now became less frequent, the head did not further descend, and complete uterine inertia followed. At 2.30 I urged the necessity of applying the forceps, and the delivery was easily accomplished inside of twenty minutes. I soon delivered the placenta by expulsion, apparently intact. There was no hæmorrhage and no perceptible abrasion of the continuity of the parts, and I congratulated myself upon the result. I told the nurse I would call and use the catheter in the evening, but on my arrival I found the patient had arisen and urinated.

Early the next morning I was called to the hospital to assist in an amputation of the thigh. I found a case of gangrene, and was excused, but the "Esmarch" slipped during the operation, and I helped control the hæmorrhage until it was readjusted. I immediately washed my hands thoroughly in bichloride solution, left the hospital, changed all my clothing, and called to see my patient. I found her condition splendid and I gave her a vaginal douche at 3 P.M. But I was soon summoned by telephone and found her just recovering from a severe rigor. I waited one hour, her temperature reaching $100\frac{1}{2}^{\circ}$. I then gave her another douche, after which she was comparatively comfortable. I learned that many women of the neighborhood had called, and knowing that she was exceedingly nervous and excitable, I concluded she had had a nervous chill. I ordered her four five-grain capsules of quinine to be given within the next twelve hours.

The following morning the nurse's report showed the evening temperature 102° ; morning, $101\frac{1}{4}^{\circ}$; pulse ranging from 100 to 120. I found the stomach irritable, a little abdominal tympanites, and pain in the right hypochondrium, radiating into the right thigh. I ordered twenty grains of antipyrine to be administered, gave her another uterine douche and an enema, the bowels moving freely with the escape of much gas. The temperature fell and the patient rested well until evening.

On February 25th, the third day, the evening temperature was 101° ; pulse, 118. The tympanites was more marked, and the pain returning, I gave quinine, antipyrine, a vaginal douche, and a turpentine enema. The patient passed a bad night, the temperature on the fourth day being $101\frac{3}{4}^{\circ}$, and the pulse 84. She had been vomiting and was very restless. I gave her a douche and inserted a rectal tube. In the afternoon there was complete anorexia, and the morning symptoms were all exaggerated. I then requested a consultation with Dr. W. We gave a uterine douche, 1:6000 bichloride solution, but nothing came away, and we found nothing to justify the condition. There was no perceptible abrasion in the vaginal tract; the os felt intact; there was no odor and no soreness to the touch. We turned our attention to the symptoms and prescribed: tr. nucis

vom., 3j.; tr. bellad., 3ij.; tr. menth. pip., 3jss.; sulph. magnes., 3iv.; elix. simpl., q. s. ad 3iv.—M. Sig.: 3j. every two hours. We also ordered an enema of turpentine, a milk diet, and the water to be drawn every eight hours.

On the fifth and sixth days the symptoms were about the same, the tympanites being controlled by keeping a rectal tube inserted above the sigmoid flexures. Milk was not well retained, and I ordered it partially digested with Fairchild's peptonizing powder, after which it was well borne.

The seventh day the tympanites was enormous, the pain unbearable, much vomiting and headache, the pulse 88, and the temperature 102°. Dr. W. was again called in, and deciding the treatment should be on the expectant plan, we gave one-half grain morph. sulph. et atropia sulph. grain $\frac{1}{100}$ hypodermatically at 10 P.M. The patient slept ten hours, awaking in the morning much improved, the bowels moving naturally.

From this to the thirteenth day there was but little change; the temperature did not go above 102°; the pulse not over 104.

On the fourteenth day the pulse was very weak; there was vomiting, diarrhoea, and night-sweats. I gave bismuth and bicarbonate of soda and milk by the rectum, with sulphate of atropia hypodermatically for the night-sweats.

On the fifteenth day I consulted with Dr. W. The pulse was 92 and weak; the temperature 100 $\frac{3}{4}$ °. I had come prepared to curette and douche the uterus, and to this Dr. W. agreed. Under anaesthesia, I curetted thoroughly and was quite surprised at the amount of small bits of broken-down tissue that were brought away. I then douched with water that had been boiled, applied pure carbolic acid thoroughly to the uterus through a Wylie's applicator, and gave the patient milk and brandy per rectum. The temperature rose in one hour to 104°; the distress was marked, but controlled with hypodermatic injections of morphine.

On the sixteenth day all symptoms were much improved; the patient was transferred to a new bed, put upon tonic treatment and soft diet. She gradually improved until the twenty-fifth day, when I discharged her.

Though the most rigid antiseptic precautions had in this case been observed throughout, there is every reason to believe that in some way or other my patient was infected through my unfortunate connection with the above-mentioned case of gangrene. The more I see of such cases, the more I am convinced that curetting in such cases need not and should not be delayed, because, when done carefully and under antiseptic precautions, it can do no harm and may do a vast amount of good.

I may doubtless be criticised for the free application of carbolic acid to such a large absorbing surface, but I am upheld by Dr. C. C. Hunt, of Dixon, Ill., who has treated successfully a number of cases of puerperal septicæmia in this manner, as reported by him in an excellent paper read before the Illinois

State Medical Society, at Jacksonville, Ill., in May, 1889.

**SECONDARY CARCINOMATOUS DEPOSITS
IN ASSOCIATION WITH SCIRRUS OF
THE BREAST: WITH REPORT OF
A CASE.**

BY WILLIAM MARTIN, M.D.,
OF BRISTOL, PA.

SECONDARY carcinomatous deposits occur during the latter stage of the disease, forming in all parts of the body, but principally in internal organs. The most important of the changes which take place in carcinoma is fatty degeneration, which always occurs, to some extent, in all varieties of carcinoma. It is usually most marked in the encephaloid, but the more rapid the growth the earlier does the retrogressive change occur. Muroid and colloid degeneration, with the formation of cysts from blocking of the ducts of the mammary gland, as well as hæmorrhage and pigmentation of tissues, may occur as secondary changes, whilst calcification or ossification are rarely found.

In all the varieties of carcinoma the tendency of secondary growths is to reflect the peculiarities of the primary. Exceptionally, in scirrhous, the growths in internal organs differ somewhat from the primary, in that they are softer and more vascular, resembling the encephaloid, to which variety they are regarded as belonging.¹ Although more rarely than in other parts, we do find that deposits take place in the osseous structures, the long bones being most liable to the invasion: foremost among these is the femur. The deposit is usually an infiltration, although it may be tubercloid. In the latter form the morbid mass is either solitary, or consists of several small nodules of irregularly rounded or oval shape, each about the size of a hazlenut. The infiltration usually or always begins in the cancellated structure, and is diffused through into the areolar tissue. The bone is seldom much altered in size or shape, but is liable to undergo rarefaction, and to be fractured at the seat of the disease. This tendency to fracture is very great. Fracture may be caused by the most trivial circumstance, such as turning in bed or muscular contraction.

The diagnosis of this secondary infiltration in the femur is evident from the subjective symptoms. The peculiarly constant, dull, heavy pain referred to the seat of the deposit, with occasional sharp, lancinating pains in the limb and body, increased almost beyond tolerance by the slightest pressure upon the part, are pathognomonic, as there is usually no history of traumatism to account for the degree of disturbance. As the slightest motion of

¹ Green's Pathology.

the part or pressure upon it elicits the most excruciating pain, the patient, as a protection from injury, usually flexes the limb, using the knee as a support for the bed-clothing.

The abdominal complications may also be marked, as will be seen in the following case, which the writer saw during latter stage of the disease, in consultation with his father, Dr. William L. Martin, to whom he is indebted for the report of the earlier history of the case.

Hannah H., about forty-three years old, married, the mother of four children, all living, presented a tumor in the right breast, which had been noticed for about two months, and which seemed to increase quite rapidly in size. Upon examination the tumor was found to be hard and mobile, occupying about one-quarter of the whole mammary gland, with the nipple somewhat retracted and drawn to one side. No lymphatic involvement was apparent. The diagnosis of scirrhus carcinoma of the breast was made, and an operation advised. The entire breast, together with the axillary glands, were removed by Dr. John H. Brinton. The patient made a good recovery from the operation, and in about three weeks returned home. She apparently remained physically well, but in the following spring noticed some hardened nodules around the cicatrix and in the axilla, which were removed a few days later. During the following fall she gave birth, at term, to a male child, of medium size and feeble vitality, which died a few months later from pulmonary disease. In a little less than a year from the primary operation the third was performed, all the cicatrices and underlying secondary growths being removed. It became necessary to repeat the operation in the fall of the same year. The fifth operation was performed nearly two years later, when a large mass of carcinomatous tissue was removed, and the axilla cleaned out. In the fall of the following year new growths in the axilla, with the cicatricial tissue and part of the pectoralis major were excised. In addition to these six operations there followed two minor excisions, the last being performed only a few months prior to her death, which took place less than six years after the primary operation.

Microscopical examination of the removed tissue conclusively showed the nature both of the primary and secondary growths.

The first operation was the most important, and the case illustrates to what degree life may be prolonged by early and thorough operation. As the tumor was unusually rapid in its growth the patient most probably would have died within a year from the time it was first noticed had nothing been done, while as the result of operative interference the patient lived for nearly six years after the first operation. During all this period, until within a short time of her death, she remained comparatively well, being able to attend to her household duties, although readily fatigued.

With some emaciation and tympanites, she also complained of a peculiar pain in the hip-joint, which she thought rheumatic, having noticed it but

a short time before death. Two weeks before her death, while attempting to cross the room, she tripped and almost fell, with severe pain in the thigh near the joint, which caused her to take to her bed. The pain remained constant, and became an urgent symptom. Upon examination no fracture could be detected. It was thought that the peculiar pain was caused by secondary deposits in the neck of the femur. The limb was kept carefully protected in a comfortable position of slight flexion. Despite the greatest care, just before death a fracture at the neck of the femur took place, most probably from the muscular contraction, as no other cause could be assigned.

During the last week of life other symptoms became marked, and required constant attention. Of these dyspnoea was prominent, and was so decided as to necessitate a constant change of position, semi-recumbency being the most comfortable. In addition, there were moderate emaciation, the peculiar characteristic pallor of the face, tympanites, nausea and vomiting—the last more properly retching, at times very little matter being ejected, except when something had been taken into the stomach a short time previously. Pain was constant and severe, requiring anodynes frequently given hypodermatically, but subsequently not yielding to these means. Diarrhoea appeared during the last week. There was slight cedema of the lower extremities. The symptoms pointed to secondary involvement of the abdominal viscera, but a post-mortem examination was not permitted.

CURVED NASAL SEPTUM: A SUCCESSFUL METHOD OF OPERATION.¹

BY CHARLES A. TODD, M.D.,
OF ST. LOUIS, MO.

THE conflicting views as to the best method of remedying curvature of the nasal septum by operation afford proof that surgeons have not yet satisfied themselves upon that point. But the problem demands solution, since by blocking the respiratory channel, the deformity gives rise to serious disorders that are sufficiently familiar.

The curvature is usually most pronounced in, if not confined to, the cartilaginous septum, though it often enough involves the osseous part as well; as Zuckerkandl points out, it is the anterior two-thirds of the septum that are affected, the posterior part of the vomer rarely swerving from the vertical.

The first operation to straighten the septum, with preservation of its integrity, was devised by the English surgeon, Adams, who forced the septum into place with flat-bladed forceps and then retained it in position with nasal plugs until consolidation was supposed to have taken place. This method does not seem to have been generally adopted; indeed, we hear nothing more of it and it is not

¹ Read before the St. Louis Medico-surgical Society, March 17, 1891.

likely that it ever produced satisfactory results for reasons presently to be stated. Then it was suggested that the cartilaginous septum be incised with cutting forceps of various styles, the sections forced into position and maintained by plugs of various devices. In a recent English work, the old operation of bodily cutting out the most convex portion so as to leave a free communication between the nasal passages, is mentioned with a degree of approval.

Many surgeons, doubtless, have tried different operations, only to find the obstinate cartilage twisted back into its undesired position a short time after removal of the retaining-plugs. The difficulty lies in this simple fact, that the septum-cartilage is highly elastic, and when merely incised and bent into position, if left to itself, is pretty sure to work gradually back; the cicatrix is stretched and the old condition is reestablished. As to the operation of excision and leaving a hole in the septum, this is contrary to Nature's method and ought not to be regarded as a legitimate procedure. A perforated septum is likely to give rise to constant trouble; the mucus collects and dries upon the margin, forming a troublesome crust; as this is picked off erosion follows, etc. The patient must constantly use unguents or some substitute to keep the edges free. In common with the usual experience, I had not found operative measures satisfactory and have avoided dealing with such cases until last December, when three pronounced cases came under my care. In these, I determined to depart from the customary methods and make a double operation to overcome the tendency of the sections of the incised cartilage to return from their median to their abnormal position. After making the stellate incision with the well-known Steele forceps, I cut across the base of the most refractory segments with a curved knife; this second cutting was made while a finger was held in the opposite nostril, so that the mucous membrane on that side should not be injured, the knife cutting through the cartilage to the mucous membrane. This scheme proved fully successful, the deformity not being reproduced, except in one instance in which the patient returned to his home in the country while the parts were still unconsolidated, and then, contrary to directions, wore the plug only part of the time; he wrote that his nose was again bad—as might well be expected. When last seen, his septum was in particularly good condition. I doubt the expediency of making the secondary incision at the time the first is made with the forceps, as sloughing might follow such extensive interference with the circulation as would be occasioned. Under cocaine, the knife may be easily applied a few days afterward, according to the appearance of the wound. The

cuts should be made so as to allow the parts to yield at once under touch of the probe; any less decided result will not insure against subsequent trouble.

I have tried to remedy the deflection in the bony septum by using, after the Steele forceps, one of my own invention, which instead of a stellate knife carries a number of conical pegs; this forceps, when applied, crushes the spongy bone, and by twisting tends, without much injury of the mucous membrane, to break it up sufficiently to enable the surgeon to rectify the position. It has seemed to me that some good was effected in this way. The principle is reasonable. Naturally when there is much thickening of the septum, such excess of tissue must be cut away. It will sometimes be found after rectifying the nasal cartilage that the passage posteriorly is blocked by outgrowths or simple thickenings of parts; these can now be reached and, according to their nature, removed with knife or saw.

ORIGINAL LECTURES.

OVARIOTOMY FOR CYSTIC TUMOR—THE RADICAL OPERATION FOR CANCER OF THE BREAST.

*Abstract of a Clinical Lecture
delivered at the New York Hospital.*

BY W. T. BULL, M.D.,
ATTENDING SURGEON.

GENTLEMEN: The first patient I present to you is a married woman, about thirty years old, who was admitted to the hospital with an enlargement of the abdomen, which had been noticed for a year. Although the enlargement has attained considerable size, the general health is evidently unimpaired. The patient only complains of the weight of the tumor and of pain upon exertion. Palpation of the abdomen readily elicits fluctuation, while a previous examination has failed to detect disease of the uterus. I shall at once pass to the consideration of the proposed method of treatment—i. e., the removal of the tumor by operation. Briefly, the operation will consist in making an incision through the abdominal wall, large enough to admit the hand, and laying bare the surface of the cyst. The existence of adhesions to the abdominal wall will be ascertained by passing a sponge-forceps or sound over its surface. By means of a trocar, the fluid will be evacuated; and then the pedicle, which is usually continuous with the broad ligament, will be ligated and the sac removed. The first incision exposes the aponeurotic layer; the second passes through the linea alba and the subperitoneal fat. Having controlled all bleeding by the application of pressure-forceps and ligatures, the peritoneum is opened and at once the cystic tumor bulges into the wound. The fluid contents having been evacuated by means of a trocar and canula, the greater portion of the sac is brought outside of the wound, and a free opening made with scissors. Fortunately, there are no adhesions to interfere with our emptying the cyst

in this manner, which prevents the contents from running into the abdominal cavity. By passing the hand into the abdomen, the omentum is found adherent over a small area of the upper surface of the cyst. The omentum is separated and ligated with silk, and the sac is drawn out further. The hand is passed into the interior of the sac and detects a second cyst within, which is torn through and its contents allowed to escape. The fluid is darker in color and thicker in consistency than that contained in the other sac. With the hand the cyst is found to fill the pelvis and to be continuous with the broad ligament of the left side and firmly adherent to the posterior surface of the uterus. The left ovary is merged in the sac. The pedicle is only a fold of broad ligament. It is to be tied with a double "chain-ligature" of strong silk, and the sac, after being separated from the uterus, removed with scissors. This step is tedious, and I encounter much troublesome hæmorrhage, which will be gradually controlled by silk ligatures and the thermo-cautery. Having left a sponge temporarily in the left side of the pelvis, I turn my attention to the right ovary, and here I find another ovarian tumor, small in size, with very thin walls. It is desirable that this be removed without rupture of its wall and consequent escape of its contents; but in order to be prepared for such an accident, I shall introduce a large sponge deep down in the pelvis, so as to limit as much as possible the discharge of the contents of the cyst. (The rupture of the cyst proved to be unavoidable, so that after the removal of the sponge, the pelvic cavity was flushed with hot water by means of a funnel and tube.) As there is still a little bloody oozing from the posterior surface of the uterus, I shall place a rope of iodoform gauze in contact with this surface, and in order to be informed as to the recurrence of the bleeding a glass drainage-tube will also be inserted. (The peritoneum was sewed up separately with a catgut suture, and over it the aponeurosis united with catgut and the skin with silk. The external dressing consisted of iodoform and sublimated gauze, held in place by broad strips of adhesive plaster, and over this absorbent cotton so placed as to avoid injurious pressure on the drainage-tube.)

During the next twenty-four hours, at intervals of two or three hours, the condition of the pelvis will be investigated by carefully introducing to the bottom of the well formed by the drainage-tube a small syringe to which a piece of soft catheter is attached, and withdrawing whatever fluid may have accumulated. If no further hæmorrhage occur, the tube will be withdrawn at the end of twenty-four hours, and the gauze after forty-eight hours. If there should be much bleeding, the wound would be reopened and the bleeding-point ligated. If this were not possible, the cavity of the pelvis would be stuffed with iodoform gauze, enclosed in a "handkerchief" of the same material. (Recovery ensued without a complication. The sinus left after the withdrawal of the tube and gauze closed at the end of five weeks.)

The next patient is a woman, fifty-four years old, with

A TUMOR OF THE RIGHT BREAST,

which has been growing steadily about two years. A few months ago the skin began to ulcerate, and since then she has had occasional sharp, lancinating pains, which have become more severe as the ulcerative process has

progressed. The general health is good. There is no material increase in the size of the breast—in fact, it appears reduced in size. The nipple is not retracted, as it often is in cases of this kind, but it is not so freely movable as in health. The upper half of the breast is abnormally hard, and the ulcer feels almost as hard as a board. The base of this ulcer is sloughy; the secretion is moderate; and there is an area of inflamed and congested skin at the periphery. The tumor and ulcer are characteristically carcinomatous, the points already noted serving to render the diagnosis quite simple. At a previous examination there seemed to be a slight enlargement of the axillary glands, and although this is not evident at present, we should not on this account be led to confine our operative measures to the breast itself. The duration of the disease in the present instance should induce us to remove the contents of the axilla; but it is a wise precaution to observe in all cases, even when no glands are felt.

To deal with this form of malignant disease radically, one must remove the diseased organ and the overlying sound skin, the fascia of the pectoralis muscle and the contents of the axilla. Do not pay too much attention to the question of securing flaps to cover the wound completely; the main thing is to remove the disease thoroughly. I wish to call your attention to the characteristic gray color, as well as the hardness of the carcinomatous tumor which I have just removed. In prolonging the incision into the axilla, you should follow the border of the pectoralis muscle, stopping at the line of the arm. Having reached the edge of the pectoralis minor muscle, divide the fascia, retract the edge of the muscle, push the fat away, and look for the axillary vein. Continue the dissection to the apex of the axilla, pushing with the handle of the scalpel or blunt scissors the fat containing the glands away from the vein and the wall of the chest. Notice that I have exposed an intercosto-humeral nerve, the division of which sometimes gives rise to disagreeable numbness on the inside of the arm. The small arteries and veins are easily seen and clamped before division. I do not yet feel any enlarged glands, but I remove the fat *en masse*. A close examination reveals several small, hard masses, which, on section, are found to present the same characteristic appearance noticed in the portion of breast already removed. This plan of removing the whole chain of glands with the fat *en masse* is preferable to the older method of incising the fat and searching for the enlarged glands; glands which are only slightly involved are thus not overlooked, and at the same time the danger of discharging some of the contents of these glands into the wound is avoided. Having searched carefully with my finger between the two pectoral muscles, to assure myself that there are no diseased glands there, I introduce a rubber drainage-tube into the axilla through an opening made below the main wound, and then bring the flaps together by sutures, taking care, in this case, not to secure complete coaptation, lest by so doing the sutures exert too much tension and give rise to sloughing. All fluid should be carefully squeezed out of the wound, and then by the skilful application of compresses the cavity may be completely obliterated. The whole upper extremity is carefully bandaged to the body so as to secure rest during the process of healing, which is usually unaccom-

panied by fever or much discharge, and ordinarily requires the patient to be confined to the house for ten days or two weeks.

You have seen the operation successfully performed, and may naturally inquire, Is it likely to cure the patient of the disease? I feel constrained to answer in the negative. The reason is, that the disease has already existed for so long a time. If we expect to cure cases of carcinoma by operation, we must adopt operative treatment at a much earlier period. I think we can all accomplish much good by instilling into the minds of the laity a correct notion as to the good results likely to follow early operations for carcinoma, as well as by encouraging them to seek advice much earlier in regard to all abnormal growths, whether apparently benign or malignant. As the average duration of life in this form of cancer of the breast, without operation, is about three and a half years, this patient would be likely to live about one and a half years more if not operated upon; but on account of the pain and discharge from the ulcer, her existence would be a distressing one. With the operation, these features are removed to a later period, and she may enjoy life with no appearance of disease for a number of months. The disease will most likely recur in the scar, or it may appear in some internal organ, as the liver. In either event the operation prolongs life, delays the progress of the disease, and relieves the patient at once of a painful growth. In some instances removal of recurrent growths is advantageous. The cicatrix should be inspected at frequent intervals, and any small, hard nodule appearing in it excised at once. This can be done with cocaine-anæsthesia. I recall two patients, both living at the end of six and ten years respectively after excision of the breast for carcinoma. In both cases several of these little secondary growths have required removal. (The wound healed without complication in two weeks. The axillary drain was removed on the third day.)

CLINICAL MEMORANDA.

CATLIN'S METEOROLOGICAL PAIN-PHENOMENA.

BY S. V. CLEVENGER, M.D.,
OF CHICAGO.

AMERICA has good reason to be proud of the good work of Dr. S. Weir Mitchell in many directions, and he has added to his fame by starting Captain Catlin upon a scientific investigation that will prove of inestimable value to neurology.

Nearly twenty years ago I essayed some observations and tabulations similar to those of Captain Catlin, when I was connected with the meteorological department of the United States Signal Service. Other work interfered with the completion of my calculations, and since the publication of the Captain's synopsis in your journal of May 2d I can clearly see where previous efforts at establishing the relationship of pain and atmospheric conditions have been so very faulty. Observers have generally sought causes in hygrometrical conditions alone, in barometrical fluctuations, in ozone quantities, in wind directions, or in thermal conditions, and have been compelled to rely upon the statements of others as

to the time when pain was greatest and least. In Catlin's case, the sufferer himself being the observer and a competent scientist, we for the first time have the advantage of reliable information upon this important subject.

Unless one has undertaken a systematic series of meteorological observations he cannot appreciate the enormous amount of work involved therein, and it is to be hoped that our Weather Bureau may take proper cognizance of Captain Catlin's work and incorporate it in the general meteorological literature, so that these researches may be built upon by future observers. By studying, as the Captain has done, the entire range of phenomena and their association with pain, certain very definite deductions are gained, and single factors, such as moisture, sunshine, etc., can then be properly assigned their modifying influences.

Pain predictions may some day be announced by the Signal Service, if it can be found that a useful purpose can be subserved thereby, particularly if Catlin's observations result in methods of mitigating the agony that so many of the limbless suffer. And why may not prevention follow next upon the knowledge of the cause? It would be well to thoroughly try the possibility of neutralizing such causes of pain, no matter how troublesome the process may be at first, for simplification of means would surely follow any success. Captain Catlin and Dr. Mitchell would be most competent to discuss this next phase of their researches, and it is hoped that they may find the time to do so.

A CASE OF VARICOSE VEINS OF THE BROAD LIGAMENT.

BY W. REYNOLDS WILSON, M.D.,
OF PHILADELPHIA.

THE patient, Mrs. C. B., aged thirty-five, was operated upon at the Lying-in Charity on April 27th. Both ovaries were removed on account of the following symptoms: She had suffered for a long time from pelvic pain, backache and hæmorrhage, continuing, on an average, for two weeks from the beginning of each menstrual period. She had been compelled to pass most of her time in bed. She had had six children, and, since the birth of her last child, three miscarriages.

When first admitted to the hospital, the patient presented the following conditions: She was suffering, to an extreme degree, from the symptoms described above. Locally, the os was deeply lacerated bilaterally, an extensive cicatrix evidently being the result of a former unsuccessful operation. The uterus was enlarged, movable, and in normal position. There was a movable tumor, the size of a walnut, to the right of the uterus, very sensitive on pressure. The left broad ligament was tense, but no distinct tumor could be made out.

At the time of the operation the right ovary was found to be cystic, the tube normal. The left ovary was also cystic, but not so much enlarged as the right, the tube on this side being also normal. In the left broad ligament there was a plexus of enlarged veins. On examination *in situ* they were three-eighths of an inch in diameter, tortuous, and evenly dilated in their whole extent; no knotty appearance was observed. This condition existed in the left ligament alone, the absence of adhesions admitting of a careful inspection of both liga-

ments. A double ligature was introduced between the ramifications of the dilated veins, and, after emptying the veins by pressure, tied on either side.

This case is similar to those reported by Dudley (*New York Med. Journ.*, xlviii., 147), Hirst (*THE MEDICAL NEWS*, lvi., 538), and Kelly (*Johns Hopkins Bulletin*, 1889-90, 223), and may be considered in connection with an article by Malins on "Varicose Veins of the Broad Ligament" (*Amer. Journ. of the Med. Sciences*, 1889, xcvi., 340). It is remarkable that Tait, in a paper on the "Pathological Importance of the Broad Ligament" (*Edinburgh Med. Journ.*, 1889-90, xxxv.), in writing of pelvic hæmatocele and intra- and extra-peritoneal hæmorrhage from a rupture of the veins of the broad ligament, fails to allude to a varicose condition of these veins as a distinct pathological condition, except in connection with hæmorrhage due to a sudden arrest of menstruation where the veins are acutely distended.

The case I report is also of importance in illustrating the occurrence of varicose veins (most frequently) in the left ligament. They occur on the left side of the female for the same reason as in the male—namely, for the reason that in both sexes the spermatic vein on this side enters directly into the renal vein and at right angles to it. There is no doubt that the symptoms were consequent to this pathological condition. In reference to this Kelly writes: "Whence the pelvic pain arises in these cases it is impossible to say; it is equally impossible to say that these great distended vessels may not play a very important part in the production of the pelvic and lumbar malaise." Those who have worked upon this subject agree in the propriety of operating for the ligation of the veins when the ordinary palliative treatment has proved unsuccessful; the future of the case reported will, I hope, confirm this decision.

1633 Locust St.

CURRENT LITERATURE.

OPERATIVE TREATMENT OF TUBERCULOUS NEPHRITIS.

MADELUNG's experience is, under certain conditions, in favor of operation. The main obstacle to a more general application of surgical therapeutics to tuberculous nephritis is the difficulty, on the one hand, of making a positive diagnosis; and, on the other hand, of locating the lesion positively on the right or left side. The most positive proof of tuberculosis in the genito-urinary organs, tubercle bacilli in the urine, is difficult or impossible of establishment. The attempts to separate small numbers of bacilli from a larger quantity of urine have not yet led to practical results. More promising as a means of diagnosis appears to be the inoculation-test from suspected urine on animals; but it is objectionable that the length of time required for the development of general secondary miliary tuberculosis is at least four weeks. In cases in which bacilli were found, Madelung experienced great difficulty in excluding tuberculosis of the bladder. Dysuria and strangury may be referred to a diseased kidney. Inspection by the cystoscope, which has proved valuable in other affections, gave uncertain pictures. Digital palpation of the female

bladder has several times been followed by permanent paralysis of the sphincter vesicæ muscle.

If the diagnosis of tuberculous nephritis has been positively established, difficulty may be experienced in determining which of the two kidneys is affected, or whether both are diseased. Cases have occurred in which the kidney, from the subjective symptoms, the palpable tumor, etc., suspected to have been affected, has been found, post-mortem, much less involved than its fellow on the opposite side, which was not enlarged and in which pain had been moderate, or severe only for a short period. In such cases, and in those rare ones in which one kidney is congenitally absent, the removal of the only renal organ must inevitably be fatal. The author reports a case which strikingly illustrates the possibility of such an error. He holds that even Thornton's method of exploratory abdominal incision and direct palpation of the suspected kidney gives no positive clue in locating the affection. Catheterization of the ureters has been proposed as another means of diagnosis. To facilitate the introduction of the catheter the author in two cases made a supra-pubic incision, as in lithotomy. The openings of the ureters were easily located, but he failed to introduce anything larger than a fine probe. Madelung disputes the diagnostic value of nephrotomy. The exclusion of disease in one kidney by draining off the urine of the suspected organ through an opening made into it, and finding the urine free from pus, is possible only in cases of unilateral non-tuberculous pyelitis or pyo-nephrosis, but usually not in tuberculous unilateral nephritis. It remains doubtful whether the fistulous opening reaches the pelvis of the kidney, since, to accomplish this, a more or less thick layer of kidney-substance has to be perforated, as when the kidneys are tuberculous the pelvis is usually not much, if at all, dilated. If only one calyx is reached, or an abscess in the kidney-substance be found, the object of the operation (to drain off the urine by another channel and prevent its escape by the ureter) will not be attained. According to Madelung, the most certain way to establish the diagnosis is to expose the kidney and examine its condition. If the latter does not account for the gravity of the signs and symptoms present, extirpation should not be performed. Since, then, initial stages of the disease cannot positively be diagnosticated, and since it scarcely admits of doubt that spontaneous recovery may take place in case of the small foci of tuberculous ulceration, the operation seems indicated only in the later stages of the disease, in which spontaneous recovery cannot be expected.

With the present means of diagnosis the object of the operation must be to remove inflammatory products which cannot be spontaneously eliminated, and thus to free the patient from unspeakable suffering. Manifest tubercular disease of other organs, except advanced cystitis, is no contra-indication to the operation.

On the principles laid down, Madelung performed nephrectomy in four of twelve cases of undoubted tuberculous nephritis. On the ground of

his own experience and on that of most other writers he disputes even the palliative value of nephrotomy.

He considers the extra-peritoneal method of operation alone admissible, and advises a free exposure of the organ to facilitate the removal of fragments of tuberculous tissue, as portions of a cyst wall, of the pelvis, and the ureter. He prefers the lateral oblique incision, joining with it, if needed, above or below, transverse incisions running toward the spine. To prevent slipping of the ligature it was found advantageous to allow a small piece of the kidney to remain, to be subsequently removed. The ureter is severed as low as possible, and the deep wound is closed with catgut sutures. Tampons of iodoform-gauze were used to fill the cavity. The wound healed kindly, but fistulous tracts remained for three-fourths of a year and one and a quarter years respectively, but finally also healed. Madelung believes that the convalescence of his cases was materially aided by continued internal treatment with creasote.

Little can be learned from the literature regarding permanent cure by this operation. Madelung collected sixty cases, reported since 1872, most of them from American and English literature. Eleven cases died immediately after the operation, and five in the first five months subsequent to the operation. The number of cases reported as permanently benefited is very small. Bardenheuer has obtained the best results. Four cases of nephrectomy, though operated on at an advanced stage of the affection, with the vitality considerably reduced, were living at the time of his communication, free from suffering, and in a condition justifying the hope of a permanent cure. It is a peculiar fact that the quantity of urine voided, increased shortly after the operations.

The author then adds a detailed report of the four cases of nephrectomy and one of nephrotomy in which nephrectomy was performed later on by Prof. Thierfelder. They were all women, in the second or third decennium of life, all permanently confined to bed, and in such a condition that death seemed imminent.—*Archiv für klinische Chirurgie*, vol. xli., No. 2.

CASE OF HÆMOGLOBINÆMIA AND HÆMOGLOBINURIA FOLLOWING INTRA-UTERINE USE OF CARBOLIC ACID.

RICHARD KRUKENBERG reports the case of a woman, twenty-eight years old, who had borne three children and was under observation for threatened abortion. After a chill, an embryo of two months and part of the membranes were cast off. The patient was pale, completely conscious and without special complaint. The pulse was 96 and regular, respiration not accelerated; the heart showed signs of a compensated mitral insufficiency. Chloroform was given, and the uterus curetted; about one and a half tablespoonfuls of membranes were removed, one little piece being greenish-gray. The uterus was then washed out with a 2.7 per cent. solution of carbolic acid, Olshausen's modification of Bozeman's catheter being used. The eyes

of the catheter became plugged with particles of tissue. About one quart and a quarter of the fluid was injected, when the pulse became small, and then ceased. The douching was immediately stopped, the uterus expressed bimanually, and the woman, who was pale and cyanotic, placed horizontally. The pulse, when it returned beat 100-112 per minute, two strong beats being followed by a weak one. Artificial respiration was necessary. The pupils were small and did not react; the extremities were flaccid, without tremor or spasm. The lungs became œdematous. After the deep coma had lasted two hours, it yielded gradually to the employment of powerful anæsthetics and irritants to the skin; but the intellect remained clouded. The patient muttered unintelligibly, was restless, breathed stertorously, and presented a pale, cyanotic face, covered with cold sweat. Two hours after the douching the bladder was emptied of five fluid-ounces of urine, dark blood-red in color, resembling raspberry juice. It smelled of carbolic acid, and after being filtered had a specific gravity of 1021. The fluid contained albumin, peptone, and 0.262 per cent. carbolic acid, estimated as tribromphenol in the acidulated distillate of the urine. The normal quantity of carbolic acid in the urine, according to J. Munk, is 0.0034 per cent. Spectroscopic examination demonstrated the presence of oxyhæmoglobin, with characteristic absorption bands in yellow and green. The reaction of the fresh urine was acid, the specific gravity when unfiltered, 1024. On boiling, and with addition of acetic acid, there was a blackish-brown precipitate, which after standing a day filled one-third of the glass. Hæmin crystals were obtained from the sediment, and Heller's test for blood gave a positive result. The sediment also contained red blood-cells, epithelium, no casts, but golden-yellow clumps, partly firmly granular and partly homogeneous.

About four hours after the abortion the patient regained consciousness, complained of great weakness, and with difficulty expectorated a profuse, frothy mucus. During the night she had a brown stool, and urine involuntary passed. She was delirious, and so restless that the moist pack ordered for her had to be removed. Toward daybreak it was noticed that she was very much jaundiced. The urine (one-half to three-quarters of a quart) was raspberry-colored, but unfortunately was thrown away. On the following day, the temperature was 98°, the pulse 110; there was sensitiveness over both kidneys and the spleen; the spleen was enlarged. The patient complained of headache, great weariness, loss of appetite, and frequent desire to urinate, with pain on micturition. A day later considerable swelling of the liver was detected. The jaundice continued, with the diffuse catarrh of both lungs. There were slight chills. The jaundice slowly disappeared, the catarrh persisted, the swelling of the spleen increased, while signs of peritonitis and of œdema were entirely absent. The urine contained a few red and numerous white blood-cells, much-clouded kidney epithelium, very few epithelial casts, but extraordinarily numerous and large hæmoglobin cylinders, yellowish-red to

golden-brown in color. The patient died in coma, following a uræmic attack. The highest temperature observed was 102.1°. The pulse shortly before death remained under 100.

The following symptoms were prominent: 1. Oliguria (seven ounces of urine in twenty-four hours as the maximum), which increased almost to complete anuria. 2. Complete anorexia; violent vomiting, which made nourishing in the usual way impossible; the vomitus smelled decidedly ammoniacal. 3. Brownish, scanty discharge of foul odor from the vagina.

The autopsy confirmed the clinical diagnosis. The author reviews other cases that have been reported, and expresses the opinion that the symptoms produced were due to a specific toxic action of the carbolic acid, which decomposes the hæmoglobin and the red blood-cells. Krukenberg, nevertheless, concludes that when the necessary precautions are used, carbolic acid is the most serviceable intra-uterine antiseptic, and the one to be preferred to all others.—*Zeitschrift für Geburtshilfe und Gynäkologie*, Bd. xxi., Heft 1.

DISTURBANCES IN METABOLISM FOLLOWING LONG-CONTINUED CHLOROFORM NARCOSIS.

CHRONIC chloroform poisoning has been noted by Casper, Langenbeck, and Behrend, but their cases have attracted but little attention. Nothnagel, in 1866, experimented upon dogs, and after death was able to demonstrate fatty degeneration of the heart and liver.

Professor A. Kast and Dr. B. Mester refer to these early cases and to Nothnagel's experiments, and also to the much more recent experiments of Ungar, Strassmann, and others. One of them had previously investigated the influence of chloroform narcosis upon the excretion of chlorides in the urine. The chlorides were found to be increased, the animals exhibited a series of disease symptoms, and failed in nutrition and weight, in spite of the fact that both before and after narcosis they were kept upon meat food freed from chlorine. The inference is that chloroform effects a toxic disturbance of nutrition.

Kast and Mester, struck by the analogy of the excretion of the chlorides as an after-effect of chloroform-narcosis to the chlorine tissue-change in other severe disturbances of metabolism, turned their attention to the excretion of the sulphurous substances in the urine. They examined the urine of fifty or sixty women shortly after chloroform narcosis in the Freiburg gynecological clinic, and that of ten other patients from the surgical clinic. The urine was examined qualitatively and quantitatively for sulphur compounds. About thirty control tests were made. Unoxidized sulphur was found to be increased largely. This is regarded as showing the profound effect of prolonged chloroform narcosis on the metabolism of albumin. As to the duration of this metabolic change, the urine showed the lead reaction for sulphur in one case as early as an hour after the chloroform narcosis, which had lasted two hours; usually it is detected on the

second day, and in one case it was present on the fifth day. The duration of the increased excretion of sulphur-holding substances coincides pretty accurately with the duration of the well-known reducing properties of chloroform urine.

As to the nature of the sulphur compound, Kast and Mester believe it to be cystin, or a body resembling it.

Urine, under the influence of chloroform narcosis, becomes highly acid, due apparently to the considerable quantities of chlorine, which occurs in the form of hydrochloric acid.

The conclusions of Kast and Mester are as follows:

1. Chronic chloroform poisoning, that is to say, the toxic action of large doses of chloroform, given either internally or by prolonged inhalation, is recognizable both in animals and in men.

2. It manifests itself by a fatty degeneration of the organs. There is a lessening of the body weight, an increased excretion of chlorine (Kast), and of oxygen (Strassmann), showing an increased consumption of albumin in animals. In man, as the result of prolonged chloroform narcosis, a sulphur compound, resembling cystin, is thrown off in considerable quantity. There is also a constant and more or less considerable urobilinuria.

3. In relation with the form of excretion of the received chloroform stand—(1) the reducing property of the urine through the formation of a glycuronic acid combination, and (2) the considerable increase in the acidity of the urine following chloroform narcosis.—*Zeitschrift für klin. Medicin*, Bd. lxxx., Hefte 5, 6.

LEUKÆMIA IN AN INFANT.

ORTNER (*Jahrbuch für Kinderheilkunde*, Bd. xxiii. Heft 3, 1891) reports the case of a female child, eight and one-half months old, always pale, who was seized, four or five months before coming under observation, with diarrhœa and vomiting, followed by emaciation and increasing pallor. For two months a progressive increase in the girth of the abdomen had been noticed, especially marked at its upper part and on the left. The mother of the child had borne nine other children, of whom six had died at ages varying from eleven to eighteen months, with symptoms of gastro-intestinal catarrh, all having been pale, feeble and rachitic. There had been no miscarriage or premature labor. The first child, fifteen years of age, presented evidences of past rachitis. While nursing the second child, together with another infant, two ulcers formed on one of the nipples, but no secondary phenomena were observed. The strange child was said to have had a cutaneous eruption and died before it was a year old. The mother's own child presented nothing abnormal. The third child, born twelve months after the second, died when it was twenty-one months old, it was said, with an enlarged spleen. Of the remaining children, the sixth and eighth, six and four years of age respectively, were living, but anæmic and presenting evidences of rachitis.

The child was small, poorly nourished, pale, the

skin wrinkled, the temperature normal; pulse, 128; respiration, 28. The fontanelles had not closed and the occiput yielded to pressure. The prominences on the cranial bones were marked, the teeth were absent, the epiphyses of the long bones were thickened. There were no evidences of syphilis. The area of hepatic dulness extended two fingers' breadth below the costal margin in the nipple line. The lower border of the right lobe of the liver was palpable. The spleen was perceptible as a palpable tumor, extending almost to the crest of the ilium and the median line. The lymphatic glands in the groins, the axillæ, the supra-clavicular fossæ and behind the angles of the jaw, were firm, but not much enlarged. No parasites or ova were found in the stools. The red blood-corpuscles were pale, small, ill-shaped and not disposed to form rouleaux. There were 2,495,000 red and 166,000 white corpuscles to the cubic centimetre, 1:15. The hæmoglobin was estimated at 55 per cent. The eye-grounds were anæmic. Treatment by inhalations of oxygen was instituted. The spleen and the lymphatic glands increased in size. Two months after admission to the hospital, lobular pneumonia developed, together with submucous and subcutaneous hæmorrhages, and death resulted in a few days from collapse.

The autopsy disclosed, in addition to the evidences of rhachitis, lobular pneumonia, parenchymatous nephritis and fatty degeneration of the heart, decided enlargement of the spleen, slight enlargement of the liver and swelling of the mesenteric, inguinal and axillary glands. Sections of the spleen showed irregular extravasations of blood and the presence of an excessive number of lymphocytes, with an increase of the cellular elements of the Malpighian bodies. The cortex of the kidneys contained numerous areas of small-celled infiltration; the vessels were distended with blood; there were changes in the glomeruli and tubules. There was an abundance of cells in the cortical follicles of the mesenteric glands, the lymph sinuses being crowded with round cells. The follicles of the small intestine were enlarged.

THERAPEUTICS OF ERYSIPELAS.

GOTTSTEIN refers to a communication of his published in the *Therapeutische Monatshefte*, March, 1889, in which he adduced proof that, contrary to the accepted opinion that antiseptics dissolved in fat lose their activity, corrosive sublimate in combination with lanolin preserves its disinfecting properties. Wenderoth has compared the effect upon anthrax bacilli of a mixture of sublimate, lanolin, and vaseline, and of one containing sublimate and olive oil. The proportions of the former were as 1 to 1000. The sublimate and olive oil destroyed the anthrax bacilli in a time between thirty-three minutes and two hours, while the sublimate and lanolin accomplished the same result in from nineteen and a half to twenty-six and a quarter hours; as it takes so long, however, it cannot be reckoned among the active disinfectants. Moreover, it was found by Wenderoth that an older mixture loses its strength in

course of time; it may be that the bichloride becomes decomposed gradually into calomel.

These results of Wenderoth in part conflict with those of Gottstein; the latter suggests that the reason may be found in the different management of the experiment.

Wenderoth's experiments in the treatment of erysipelas with sublimated lanolin are more important and of general significance. The erysipelatous portions of the skin, and also a part of the skin bordering upon them, were generally covered twice a day with a thick layer of the sublimated lanolin, over which cotton is laid. There was no internal treatment, except the administration of wine. Of the ten cases treated by Wenderoth in the manner described, all but two were characterized by the limitation of the erysipelas to the affected parts, and by a short duration. In one of the two exceptional cases, the erysipelas had attacked both arms, and the general symptoms were severe. On the seventh day there was a decline. In the second case, in spite of the treatment, the erysipelas extended beyond the buttocks, and was checked on the thirteenth day with injections of corrosive sublimate.

Gottstein has treated a case with the sublimated lanolin. The patient was a woman fifty-six years old, who had suffered severely several years before, and for a long time, with facial erysipelas. She was taken ill with high fever and severe general symptoms, such as delirium. The next day there was erysipelas of the right side of the face and a temperature of 103°. The sublimated lanolin was energetically applied. The next day the temperature was 100.5° and the erysipelas was subsiding. On the third day the temperature rose again to 102.3°, owing to involvement of the scalp. On the fourth day the temperature fell to 97.4°, and convalescence began. The patient was out of bed in eight days from the beginning of the attack.—*Therapeutische Monatshefte*, April, 1891.

A CASE OF PURULENT PERITONITIS CURED BY ABDOMINAL SECTION.

HENOCH (*Berlin. klin. Wochensh.*, January 26, 1891) has reported the case of a girl, four years old, without hereditary taint, admitted to his clinic with vomiting, colic and diarrhœa, which had existed for a month, and a temperature of 101.8°. In a few days the abdomen became distended; the pallor and emaciation increased. The child lay still, with the legs drawn up, movement giving rise to pain. A little above the umbilicus, fluctuation was detected over a limited area. Percussion dulness was more extended. The diaphragm and the heart were displaced upward. By an exploratory puncture a little thin pus, containing no bacilli, was removed. Through an incision, an inch long, between the umbilicus and ensiform cartilage two quarts of thin pus, mixed with coagula, were removed, and drainage provided. Uninterrupted recovery ensued. Henoch did not believe the peritonitis tuberculous, not only from the failure to find bacilli but also from the acuteness of the attack and the rapidity and completeness of recovery.

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SATURDAY, JUNE 20, 1891.

THE ANTAGONISM BETWEEN MICROÖRGANISMS AND THE TREATMENT OF INFEC- TIOUS DISEASE.

THE first attempt to diminish the virulence of pathogenic microörganisms by the antagonistic action of other microörganisms was made by PASTEUR, who, by inoculating fowls with the virus of chicken-cholera, rendered them resistant to anthrax. FEHLEISEN, NEELSEN, CANTANI, PAVONE, PRIMROSE-WELLS, BABTCHINSKI, HEER, and others have since adduced a number of experimental and clinical facts which are rather favorable to the therapeutic application of the antagonism between microörganisms. An analogous antagonism is seen in the higher forms of vegetable life, as evidenced by the crowding out of some plants by the growth of other varieties and the tendency of forests to present more or less uniformity of kind, in spite of the fact that the soil may be quite as fertile for one variety of forest-growth as for another. The subject has received attention at the hands of BOINET (*Bull. Gén. de Thérap.*, September 30, 1890), who has studied the action of the yeast of beer upon the development and virulence of the bacilli of typhoid, of anthrax, and a number of other pathogenic bacteria. Observations were made upon tube-cultures of the microörganisms, and were to a certain extent sup-

plemented by inoculations of animals with the mixed growths. Culture of the yeast grown with typhoid bacilli caused a notable alteration in the morphology of the latter, the individual bacilli growing to abnormal lengths, with a tendency to a wavy outline; these peculiarities were also apparent in subsequent generations. Anthrax bacilli suffered little change, except possibly a diminution in length. Both in culture and inoculation experiments the presence of the yeast appeared to exert an exaltative influence on the bacillus pyocyaneus, increasing its rapidity of growth and its virulence in the body. While it cannot be said that the experiments of BOINET have yielded any positive results clinically, it is certain that the association of yeast with pathogenic microörganisms does not heighten their virulence, while there is evidence of a diminution of activity of the infectious agent. For example, while ordinarily in anthrax the liver is found to contain large numbers of bacilli, but few could be found in the livers of animals dead after inoculation with the mixed growths. In typhoid fever, more positive favorable results were obtained in 1888 by HEER (*Deut. med. Zeitung*), who succeeded in modifying the diarrhoea by the internal administration of commercial beer-yeast. He also records having favorably influenced patches of thrush and diphtheritic deposits by local applications of yeast suspended in glycerin.

The antagonistic action of microörganisms among themselves is frequently witnessed in the laboratory, although in these attempts at isolation by natural selection absolute purity of growth is rarely obtained, because the necessary conditions are wanting. Clinically, little study has been devoted to the results of the coincident occurrence of infectious diseases to determine whether the intensity of one or the other is diminished or exaggerated. In WOODWARD'S study of the relations of the malarial and typhoid infections, as presented in the medical records of the late war, it is recognized that malarial infection modified the severity of the attack as well as the mortality of typhoid fever, as compared with the course and termination of the ordinary type of typhoid fever as seen during the same time and under the same external conditions. Moreover, in the absence of knowledge of the nature of the antagonistic influences, the clinical and experimental value of alcohol—a product of microörganismal activity—in the suppression and extermination of infectious agents may be cited in justification

of the line of thought suggested. It is not at all impossible that substances analogous to alcohol may be produced which, if properly understood and employed, may have a wider field of applicability in the control of disease. It is possible that the overpowering of one bacterial growth by another is due to the elaboration of some such controlling agent, although the same result may be due to excessive growth and the effects of crowding. Whatever the method, this suggestion offers a line of study promising to be of no little importance in combating disease. The modification of a severe type, rendering it less severe, if not eradicating it entirely, cannot but lead to the most positive and widespread benefit, especially in the management of epidemics. Non-pathogenic microorganisms, as those contained in the yeast employed by HEER and BINET, should first be studied. The results may only partially succeed in diminishing the virulence of the graver infections, but even the negative knowledge thus derived is not unlikely to prove of value in relation to exposure to infection; positive results would in the highest degree be satisfactory to those who strive to attain the ideal in the management of infectious diseases—that is, their eradication.

THE CART BEFORE THE HORSE.

IN his "Plea for the Scientific Study of Insanity" (*Brit. Med. Journ.*, May 30, 1891) DR. TUKE tries to rally the materialists for another charge against the strongholds of the well-entrenched enemy. "All insanities are symptoms of morbid conditions of the brain," is the text of the discourse. But the author's bitter complaint against the indefiniteness attending all research into the etiology of depraved mental states will hardly be overcome either by the histological or the gross anatomist. It will be a long day or two before the microscope or the dissecting-knife reveals the supposed lesions of mental disorders. It is superb effrontery to claim as scientific only the investigation that starts out with the assumption that function is the product of structure, when the developmental history of every organ and every organism in the world is a crying demonstration that function always precedes structure. It takes tendency and purpose, or, in other words, mentality, a long time to create its instruments that we call organisms, and then the gentlemen who loathe teleology gather about the mechanism and say that the tool made the tool-

maker. Before founding the pathology of mental disease upon a crude bit of dogmatic deduction the would-be psychologist should answer two questions: 1. Is the pseudopod of an amoeba an organ or not? and, whether the question be answered affirmatively or negatively, 2. Does the pseudopod create the desire of locomotion or does the desire create the pseudopod?

A SIGNIFICANT QUESTION.

THOSE who have been given to thinking that women are incapable of competing with men for the highest intellectual acquirements and prizes have been repeatedly startled during late years to learn, especially from England, of the astonishing success of young women in competitive examinations in fields of study and research deemed especially preëmpted by the masculine mind.

There have been few young modern medical students who have given more brilliant promise of future fame than DR. ADELE McCULLOCH KNIGHT, of South Australia. Honors, prizes and distinctions came to her as if spontaneously. She has just died at Vienna at the age of twenty-five. One cannot help wondering if, under the intense stimuli of a noble ambition, a laudable rivalry, and a fervent love of science, such mental development or acquirement is not the sad evidence of the prodigal expenditure of a life's vital revenues in a few brief, splendid years.

In one of the great cities of the Eastern United States it is a subject of common and eulogistic remark that the course of study is more thorough and the examinations more rigorous in the Women's Medical College than in the other prominent and dignified colleges for men. "In a competitive examination the girls will whip the boys every time." But among these noble girls has there not possibly been over-strain? Does there remain the strength to wrestle with Life?

COMMISSIONS BY DRUGGISTS TO PHYSICIANS.

ACCORDING to the President of the California State Medical Society the sentiment of self-respect and professional honor among apothecaries and doctors must in California, and especially in San Francisco, be at low ebb. It appears that the most impudent boldness in percentage-giving and taking is very prevalent. Prescriptions are sealed in

envelopes, telephoned directly to the drug-store, or written in cipher, outrageous prices being demanded from the patient in order to pay the doctor from 30 to 75 per cent. It is hard to believe that men can stoop to such wretched practices. In the Eastern cities, if the custom exists at all, it is well concealed or so sugar-coated that it becomes a far more delicate proceeding. Essentially, of course, there is no difference in morality between taking an expensive Christmas present and having in the druggist's shop a lock-box of which the physician alone has the key, and in which is deposited a dollar for each prescription received. It is gratifying to know that with us even the complimentary gifts are rarely offered or received. We have heard of a druggist who was greatly surprised to find himself credited by a hospital report as the donor of much fine cologne and toilet sets galore. The doctor had considered himself as only the transfer agent.

THE LONDON HOSPITALS AND CONVALESCENT HOMES.

FROM the *Lancet* Hospital Sunday Fund Supplement we learn the extent of the medical charitable work done in the care of the sick of the great metropolis. During the year 1890 the average number of beds daily occupied was 6143, and the total number of in-patients received was 78,033. The number of out-patients' visits reached the enormous total of 1,158,026. This entire work was done at an expense of \$3,031,290. An interesting and peculiar phase consists in the convalescent homes, of which some 15,000 patients enjoyed the benefits. It is a matter of regret that in the United States we have nothing corresponding to this excellent system. A patient lingers on during the long weeks of slowly increasing strength, in close intimacy with all forms and degrees of illness about him, depressed by unpleasant sights and sounds, at a time when the condition of the mind must powerfully exercise an influence upon nutrition and the restoration of vitality. A change to more agreeable surroundings would often be of double service to the over-crowded hospital and to the convalescing patient.

THE SHEPPARD ASYLUM.

THE second largest private bequest ever given to found a hospital for the insane was that of MOSES SHEPPARD, of Baltimore, who in 1857 left \$560,000 in trust to establish an institution for the care and

treatment of members of the Society of Friends who might become insane. The trustees out of the income have expended about \$880,000 in the purchase of some 377 acres of land near Baltimore and in the erection of three fire-proof buildings, each 365 feet long, from 75 to 200 feet deep, and from two to four stories high, fitted with the best modern improvements as to ventilation, heating, water-supply, etc. The original endowment fund, despite these outlays, has even been increased, and the asylum will be supported by the interest of \$600,000 in well-invested securities. DR. EDWARD M. BRUSH, at present of the Pennsylvania Hospital for the Insane in Philadelphia ("Kirkbride's"), has been selected superintendent. DR. BRUSH is an alumnus of the Buffalo Medical College, graduating in 1874. As a specialist he is well known to the profession, and will bring to his new field of labor a well-trained mind and a rich experience that fit him exceptionally well for the great work he has to do.

THE DOCTOR IN THE DRAMA.

IN the new play, *Margaret Fleming*, lately produced in Boston with so much interest and success, it is pleasing to find the family physician, in a typical American home, represented as having so dignified and honorable a function. According to the playwright, he adds to his titular duty that of the old-time spiritual and moral adviser. He is the family friend, pointing out the path of duty, and encouraging the weak and erring to walk in it. Since MOLIÈRE, the doctor in the play and in real life has greatly changed both rôle and character. It becomes a question if the parson has indeed been so derelict in duty that the medical man must also assume a part of that worthy's office in addition to his own. Between city and suburban practice there is, doubtless, a difference in this respect. In village and rural life hundreds of families have no warmer or truer friend than the family doctor. The business necessities and manners of the city practitioner may bring greater rewards of certain kinds, but —

A NOVELIST'S ANATOMICAL KNOWLEDGE.

THE critics are advising that brilliant cometary novelist, RUDYARD KIPLING, to be a little more careful about his anatomical facts before writing his next story. One of his heroes is reported as being permanently blinded by a sabre cut on the forehead, which injured the optic nerve.

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

*Meeting of April 6, 1891.*THE PRESIDENT, WILLIAM HUNT, M.D.,
IN THE CHAIR.

DR. JOHN H. BRINTON presented

A TUBE FOR THE REMOVAL OF FRAGMENTS OF BONE
IN LITHOLAPAXY

—a modification of that of Otis. After crushing a stone there is often difficulty in removing the fragments, partly due to the character of the tube employed. In the tube demonstrated the curve at the end was so adjusted that the instrument is flat in the bladder while the bulb is perpendicular. The tube is provided with a stylet which completely closes the fenestra.

Dr. Brinton also showed a modification of Thompson's crusher. The blades are so arranged that when the stone engages, it slips up toward the bend of the blades where the force can be most advantageously applied. The blades are short, so that the instrument can readily be turned in the bladder.

DR. JOHN B. ROBERTS related that, in one case, after breaking the stone and washing out considerable of the débris there remained a portion of the stone, which was very hard. Exerting a good deal of force on the screw, he stripped off the thread of the instrument, and, having no other lithotrite at hand, he was compelled to make an incision to deliver the remainder of the stone. In another case, there were many fistulæ in the scrotum, and one in the penis in front of the scrotum, as a result of rupture of the urethra. After opening the fistula, and introducing a sound through the urethra, a good-sized stone was detected in the bladder. The ordinary operation of lithotomy was then done, and the stone removed. The complication had not been suspected either by the patient or his physician.

DR. JOHN B. DEEVER showed a stone weighing 420 grains, removed from a child three and a half years of age by supra-pubic cystotomy. The stone was too friable for removal with the forceps, and was brought to the opening in the abdomen by a finger introduced into the rectum. The child made an interrupted recovery, and was entirely well in three weeks. At the end of two weeks the urine was passed through the urethra. The bladder wound was not closed.

DR. W. W. KEEN stated that air for injection into the bladder may be readily sterilized by passing it through a mass of cotton placed over the end of a Davidson's syringe.

DR. NEILSON read a report of

TWO CASES OF EXTENSIVE COMPOUND DEPRESSED
FRACTURE OF THE SKULL,published in *THE MEDICAL NEWS* of May 30, 1891.

DR. W. W. KEEN stated that the two cases reported illustrated the results to be attained by modern methods of treatment. The introduction of the finger between the dura and the bone in searching for bleeding vessels is, of course, new. It was Dr. Keen's practice not to ligate any vessels whatever in the scalp. Hæmostatic forceps were applied and removed one by one, and the

point of hæmorrhage inspected; if bleeding continued the hæmostatic forceps were replaced. Sutures were carefully introduced at these bleeding-points, the flaps were brought together, and in this way the hæmorrhage was controlled. The conditions were different when there are bleeding vessels in the dura of the brain. In such case ligatures are absolutely necessary. In the dura the circular Hagedorn needle is the best to control the hæmorrhage. The rat-tooth forceps is to be recommended for lifting the membrane. The dural vessels occasion no difficulty; the vessels of the brain are more troublesome. It is to be feared that if gauze packing be permitted to remain for eight or twelve days, it may give rise to irritation of the brain, while any advantage to be gained by pressure will be had in two or three days at the longest. Drainage is to be judiciously employed in cases in which there are bleeding-points not absolutely secure; but in ordinary operations upon the brain, after arresting the hæmorrhage, Dr. Keen has discarded drainage without resultant harm. In one case a little puffiness was noticed ten days after the operation. The introduction of a probe and the separation of the scalp were followed for four or five days by a discharge of dark, tarry-looking blood—undoubtedly the remains of a liquefied clot, which had given rise to a little local irritation and elevation of temperature. As an illustration of the possibility of danger, in another case in which the skull was a half-inch thick, drainage was continued for three days, and the tube removed; hernia cerebri was nevertheless threatened.

In any subsequent case in which it became necessary to remove a portion of the dura leaving an opening in it, Dr. Keen proposed to take a portion of the scalp sufficiently large to close the dural opening and secure it in such a way as to overcome the tendency to hernia cerebri.

DR. NEILSON concluded by stating that the criticism of Dr. Keen was based upon a misconception. The time at which the iodoform gauze was removed was from the fifth to the eighth day, not from the eighth to the twelfth. His experience had been wholly with cases of severe injury, in many of which the brain was lacerated, and in these cases drainage seemed safest, as a provision for the escape of blood and other fluids.

Adjourned.

*Meeting of May 4, 1891.*THE PRESIDENT, WILLIAM HUNT, M.D.,
IN THE CHAIR.

DR. JOHN ASHHURST, JR., reported a number of cases in which he had performed

OPERATIONS UPON SOME OF THE LARGER NERVES.

In several cases he had sutured nerves as a primary operation. In one case of excision of the elbow-joint, the parts were so distorted and matted together that section of the ulnar nerve was unavoidable. The cut ends were immediately sutured, and the patient recovered with a limb as useful as if the nerve had not been divided. We are all familiar with the advantages of suturing nerves as a primary operation, but there is still doubt on the part of some surgeons as to the advantage of secondary suture. In the case of a young man, in whom the median nerve and the tendon of the flexor carpi radialis

muscle had been divided by a wound received some months previously, with paralysis and trophic changes, the ends of the nerve were freshened and brought together with catgut; the divided tendon was also united. The hand was dressed in the position of extreme flexion. The wound healed without complication and the function of the part was restored. An interesting point was that the restoration of function began at a period earlier than at which we could ordinarily expect to have regenerative changes take place. It is possible in cases in which secondary suture has been attended by such a favorable result, that the preceding degenerative changes, which take place principally in the proximal ends of the nerve, have gone on until they are already so far advanced that the subsequent regenerative changes commence so soon as the restoration of continuity is established. Whatever the explanation, it is a fact that the function of nerves is sometimes restored at a very early period.

In cases in which, on account of loss of tissue or retraction, it is not possible to bring the ends of the nerve together, various other means have suggested themselves. One is to unite the distal end of the divided nerve to another nerve. Another plan is to split the cut ends of the nerve in such a manner that they may be spliced by turning down a section from the proximal portion and uniting it with a section turned up from the distal portion. Still another plan is the introduction of a graft of nerve from an amputated limb or from a lower animal. One other ingenious plan is to introduce a decalcified bone tube between the ends of the nerve; it has been found that by doing this, the nerve tissue may be prolonged in the calibre of the tube. An analogy to this can be found in sponge-grafting. As is well known, by introducing properly prepared sponge, a wound can be induced to fill up by granulation more rapidly than otherwise. The influence appears to be mechanical, a skeleton being furnished on which the granulations can spread. This operation might be resorted to in any case in which nerve-grafting was required, but in which a natural graft was not available.

Dr. Ashhurst then spoke of cases in which operations had been performed for the removal of tumors from nerves. Two cases of the so-called "painful subcutaneous tubercle," believed by the majority of writers to be a true neuroma, were entirely cured by operation. The large majority of cases of neuroma in stumps are fortunately not painful, but when they are, and the pain can be localized in a single nerve, excision may be resorted to. He had recently had occasion to remove a large neuroma of the kind called "false neuroma," from the popliteal nerve. The tumor was as large as a hen's egg and situated between the branches of the nerve in such a way that it was a matter of some difficulty to remove it without partial division of the nerve itself. The patient made a complete recovery. One point of interest as regards these tumors is as to the diagnosis. They can be moved readily from side to side, but not longitudinally.

Dr. Ashhurst reported eight cases of nerve-stretching, or as the French call it, elongation of nerves. In three cases the musculo-spiral nerve was stretched, having been exposed just above the bend of the elbow. The first case was that of a middle-aged woman with trau-

matic neuralgia. The operation gave entire relief, but only for a time. Afterward, the pain recurring, neurectomy was performed at her own request. She was permanently relieved of pain, although, of course, paralysis of the parts supplied by the radial nerve resulted. The second case was one of tetanus in which the musculo-spiral and median nerves were stretched, but without benefit. The third case was one of traumatic paralysis. In a case in which the median nerve was stretched for traumatic neuralgia the operation was successful. After stretching nerves, the parts around the wound are for a few days extremely tender. Such was the case in this instance, but the neuralgic pain did not recur so long as the patient was under observation.

Upon two occasions Dr. Ashhurst had stretched the nerves of the brachial plexus. In a case of so-called "concussion" of the brachial plexus in a sailor, there was not only brachial paralysis but also intense neuralgia of the upper extremity. The plexus was exposed in the axilla, and the six principal nerves were stretched. The patient was much relieved by the operation. There was certainly less pain. In another case, in a young man of rather deficient mental powers, there was a history of intense neuralgia of the arm, resisting all medical treatment, and said to have followed a twist of the arm some years before. The patient experienced great relief from the operation and considered himself almost entirely well. In two cases, Dr. Ashhurst had stretched the sciatic nerve for sciatica. One was in a neuralgic female, and although the pain was relieved on the affected side it recurred in the course of the nerve upon the opposite side. This bears out the observation of other surgeons that in cases of idiopathic neuralgia there is not so much to be hoped from the operation of nerve-stretching as in traumatic cases. In a second case, the patient considered himself much benefited by the operation.

It is interesting to observe the profound shock to which stretching of large nerves gives rise. In cases in which, for instance, the sciatic nerve is stretched, the patient suffers from shock to a degree out of all proportion to the severity of the proceeding. This tends to confirm the view that the influence of nerve-stretching is not only local, by breaking up interstitial adhesions, but that it also operates upon the central nervous system, and in some cases is reflected to the corresponding nerve of the opposite side. In the operation of stretching or elongation of nerves, the amount of force to be applied should be sufficient to lift the limb from the bed. The nerve is first drawn upward, then downward; then the whole limb is, for a few seconds, lifted and suspended by the nerve. Such an amount of force is safe in dealing with such nerves as the radial, the ulnar, the median, or the sciatic, but would not, of course, be safe in dealing with very slender nerves. After the operation, the nerve should be restored to its place, and primary union of the wound encouraged.

Neurotomy, or simple section of a nerve, is not often employed at present, since its effect is only temporary, the ends of the cut nerve usually reuniting at an early period. Neurectomy, on the other hand, in suitable cases, may be properly resorted to with considerable freedom. In one case referred to, in which elongation had failed, a portion of the musculo-spiral nerve was excised; a permanent cure was obtained. In four cases Dr. Ashhurst had resected

portions of the inferior dental nerve for neuralgia; in three of these the results were perfectly satisfactory. In one instance only temporary relief was afforded; in this case it was noticed at the operation that the nerve was enlarged and apparently inflamed. The patient returned a year afterward, when the lower jaw was found to be the seat of an extensive epithelioma, a sufficient explanation of the origin of the neuralgia. This case is interesting as illustrating the fact that malignant disease may give rise to rational symptoms before the physical signs of its presence can be detected. At the time of the operation there was no reason to think that the patient had a malignant growth.

In a case of painful convulsive spasm of the trapezius muscle in a middle-aged woman, Dr. Ashhurst resected the spinal accessory nerve. The operation effected a temporary cure. After a time the spasm returned, but was not so painful as prior to the operation. This is the usual history of such cases. The operation is, however, justifiable, though the result be but temporary.

Resection of the superior maxillary nerve has been performed in a number of cases, and in some with good results. Dr. Conner some years ago collected thirteen cases, in seven of which the pain recurred after a shorter or longer interval, while two of the others had not been under observation more than one year. Dr. Dennis has more recently collected a larger series of cases, in which more or less benefit resulted in sixteen out of twenty-one. The operation is a proper one in suitable cases. It consists in shaving off the nerve beyond the ganglion of Meckel. The suggestion has been made that the Gasserian ganglion should be removed. This has been done by Mr. Rose by removing the upper jaw and trephining over the foramen ovale. In this case destruction of the eye followed, and enucleation became necessary. The patient recovered from the operation, and at the end of six months was still free from pain. In the discussion which followed the reading of Mr. Rose's paper, the suggestion was made that possibly all the good attained might have been accomplished by excision of the upper jaw without opening the skull. So many branches of the nerve would have been severed in this operation that it is probable that relief, at least for a time, would have been given. Such an operation would be analogous to that suggested by the late Dr. S. D. Gross, who found that neuralgia of the alveolus in edentulous persons was relieved by removal of the alveolus itself. Dr. Ashhurst had himself employed this procedure in two cases with satisfactory results. The operation consists in simply laying open the soft parts, and with gouge-forceps cutting away the alveolus. Somewhat analogous, too, are those cases of neuralgia of the metatarso-phalangeal articulation relieved by excision of the joint, which Dr. Morton has reported. In the same way it is conceivable that, ingenious as was the operation of Mr. Rose, the same result might possibly have been secured by removing the upper jaw.

Dr. Abbe has extended the ordinary operation of neurectomy for cervical neuralgia, in one case, by removing the vertebral laminae and cutting the roots of the nerves. The wound healed, but the patient was not relieved of the pain. Another operation consists in freeing the nerves from external pressure. It is now a good many years

since Ollier relieved a patient by removing a mass of callus which pressed upon a nerve. This operation has been repeated a number of times. Sometimes the pressure was due to a cicatrix and sometimes to bone. In the case of a child on whom osteotomy had been performed by another surgeon for bow-legs, it was noticed sometime after the operation, when the parts were entirely healed, that the toes of the right foot were drawn down, apparently from paralysis of the extensors. Subsequently an ulcer had formed on the end of the great toe. The flexor tendon of the toe had then been divided and a splint applied. Afterward the patient dragged the foot when he walked; very slight pressure caused sloughing. Three months subsequently, when the patient came under the care of Dr. Ashhurst, the great toe of the right foot could not be raised, and blisters were constantly forming on the toe and heel; the tibialis anticus did not respond to electrical stimulation. It was suspected that the anterior tibial nerve might have been divided in the original osteotomy, but this did not seem likely, because the symptoms had not developed until two months after the operation. Exploration showed that an exuberant mass of callus had formed, pressing upon and binding down the anterior tibial nerve. On cutting down and freeing the nerve, it was found that in the open wound the muscles responded to galvanism. The incision was closed, and soon afterward a fair response to the galvanic current was noted. The patient progressed to recovery without any further trouble, the paralysis gradually disappeared, and the trophic changes were entirely removed.

In the case of a man in whom fracture of both bones of the left leg had been followed by marked bowing outward, there was great pain at the seat of the fracture, and in the ankle, referred to a spot one and one-half inches external to the spine of the tibia. Cutting down upon the tibia, an enormous mass of callus was found, and cut away with great difficulty. The nerve was pressed upon and displaced by this mass. The patient is still under treatment, but has had no pain since the operation; there is every reason to hope that he will recover with a useful limb. These cases are particularly interesting, because in them good can be accomplished without concomitant evil. In neurectomy there is always a risk that the operation will impair the utility of the part, even if it gets rid of the pain.

DR. THOMAS G. MORTON reported a case of

FRACTURE OF THE PATELLA, IN WHICH THE FRAGMENTS WERE APPROXIMATED BY CATGUT; RECOVERY WITH OSSEOUS UNION AND UNIMPAIRED FLEXION AND EXTENSION.

H. F. D., thirty-two years old, fractured the patella by falling from a car, striking the flexed knee upon the ground. There was considerable pain and intra-articular effusion. The limb was placed upon a straight posterior splint and cooling lotions were applied. Five days later a vertical incision six inches in length was made in the median line directly over the patella, exposing the fracture, which was found to be nearly transverse; between the broken surfaces were shreds of the torn extensor tendon, which would have formed an effectual barrier to the apposition of the fragments by any external apparatus. After being drilled in three places, the fragments

were closely approximated and secured by large catgut tied over the upper surface of the patella. A gut drain was inserted and brought out at the upper end of the wound, which was closed by interrupted gut sutures. The limb was again placed upon the straight splint and elevated. The subsequent history was uneventful: there was not an untoward symptom. The dressings were changed four times—first on the seventh day, when the wound was found entirely closed; on the forty-seventh day the patient walked out of the hospital, the limb being protected by a posterior splint. At this time, four years after the accident, there is perfect bony union; flexion and extension are absolutely normal; the patient does not experience any difference in the usefulness of the two knee-joints.

DR. THOMAS G. MORTON also reported a

PECULIAR AND PAINFUL AFFECTION OF THE FOURTH METATARSO-PHALANGEAL ARTICULATION.

The patient, M. M., was twenty-two years old; at the age of fourteen he first experienced pain in the right foot; after some time the left became similarly involved. From that time to the present there have been daily paroxysmal attacks of pain. The suffering has at times been almost unbearable; it generally seemed to be produced by wearing shoes; the pain was confined to the joints of the fourth metatarso-phalangeal articulation of both feet. Removal of the affected joint of both feet was followed by complete relief.

This peculiar and painful affection of the fourth metatarso-phalangeal articulation is not uncommon, but has not received the recognition it deserves. Periodical pain is the only symptom; the suffering is very often almost intolerable. The affection is strictly local, and may be mild or severe. It commonly follows a sprain or twist of the foot or results from pressure of the shoes; it often appears without apparent cause; sometimes both feet are involved.

The occurrence of neuralgia may be understood by a reference to the anatomy of the parts. The metatarso-phalangeal joints of the first, second and third toes are almost on a direct line with each other, while the head of the fourth metatarsal is from one-eighth to one-fourth of an inch behind the head of the third, and the head of the fifth is from three-eighths to one-half an inch behind the head of the fourth; the joint of the third, therefore, is slightly in advance of the joint of the fourth, and the joint of the fifth is considerably behind the joint of the fourth. The fifth metatarsal joint is so far posterior to the fourth that the base of the first phalanx of the little toe is brought on a line with the head and neck of the fourth metatarsal, the head of the fifth metatarsal being in apposition with the neck of the fourth. Lateral pressure brings the head of the fifth metatarsal and the phalanx of the little toe into direct contact with the head and neck of the fourth metatarsal, and the extremity of the fifth metatarsal rolls above and under the fourth metatarsal.

The mechanism of the affection becomes apparent if we consider the nerve-supply of the parts. The branches of the external plantar nerve are distributed to the little toe and to the outer side of the fourth; deeply lodged between these toes are numerous branches of the same nerve, which may be unduly compressed or pinched by a sudden twist of the foot.

Great comfort, often entire relief, is afforded by the use of a soft, narrow flannel bandage, which should firmly cover the anterior portion of the foot, so as to give steadiness to all the toes and which should be tight enough to prevent any rolling or movement of the joints. A suitable broad-soled shoe, laced in front, should be worn. In many cases, however, no treatment except excision of the irritable part will be of any service, and the excision of the joint of the toe, which is readily performed and quickly recovered from, will insure a complete and permanently good result.

DR. CHARLES W. DULLES reported a case of

RARE LUXATION AT THE ELBOW.

G. C., a slight woman, twenty-two years old, fell to the floor by the tipping over of the loose seat of a chair on which she was sitting, injuring the left elbow. Assisted to her bed, it was found that there was a luxation at the elbow. Ether being administered, a dislocation of the radius forward, upward and inward, and of the ulna backward, upward and outward was made out, as manifested by the following signs: the outline of the olecranon was apparent and the process could be felt projecting backward and outward on the radial side of the humerus above the outer condyle; the head of the radius was felt, and its outline was distinctly seen resting against the humerus on its ulnar side above and in front of the internal condyle. The width of the injured elbow was increased to about double that of the sound one, and the arm was semi-flexed, with the forearm so over-pronated that the surface of the dorsum was turned toward the chest. It is well known that the forearm is strongly pronated in simple dislocation of the ulna backward and of the radius forward, which itself is a rare luxation; but in the case reported the forearm was actually twisted on its long axis, and the radius could be felt resting against the humerus above the internal condyle, on its ulnar side. The arm below the elbow was numb, and the patient suffered great pain at and above the elbow, as far as the head of the humerus.

Reduction was effected by placing the patient in the recumbent posture. Standing on her right side, the upper arm was so grasped that the humerus was firmly held near the elbow, and the forearm was flexed and rotated strongly outward until the head of the radius was opposite the external condyle; then the forearm was extended, drawn downward, and strongly drawn upon while being flexed again, when the ulna jumped into its proper place with an audible sound. All the motions at the elbow joint—flexion, extension, pronation and supination—were made, and the humerus, as well as the radius and ulna, were examined from end to end for evidences of any as yet undetected injury which might exist; but none was found. An external rectangular splint, padded with fine carded wool, was then applied and fastened to the arm, forearm and hand to the middle of the fingers. A sling completed the dressing.

The patient made an uneventful recovery, and in a few weeks could use the arm quite well. Two months after the date of injury, the condition of the arm was almost perfect, the only variation from the normal exercise of every motion being a very slight impairment of the power of flexion, so that the left wrist could not be brought as near the shoulder as the right, about half an

inch. This slight imperfection was ultimately overcome.

DR. DULLES also reported a case of

DANGEROUS SPLINTER-WOUND OF THE ORBIT.

A small boy, about ten years of age, had protruding about one-fourth of an inch from the upper right eyelid, the butt of a splinter of wood about one-third of an inch square. A short time before, while playing with some comrades, the boy had run toward a post-and-rail fence, and had squeezed rapidly between two of its rails. Immediately afterward he cried out with pain, and his comrades found that he had run a splinter "into his eye."

On examination it was found that the splinter had apparently passed through the eyelid and the inner and upper part of the eyeball, and was firmly imbedded in the bony wall of the orbit. Its direction was downward, backward and toward the median line.

After gaining the child's confidence, the fixity of the splinter was tested with the fingers and with a pair of dressing forceps. With neither of them was it possible to move the splinter. With a pair of carpenter's pliers, firmly grasping the splinter, the head steadied with the free hand, traction was carefully made upon the splinter in a line with its long axis. Torsion or rotation was avoided, in the hope of bringing away the entire splinter. I had to apply considerable force, and the splinter broke. About an inch and a half came away, leaving an unknown quantity behind.

In conference with Dr. Agnew it was concluded, from a study of the direction of the splinter and the anatomy of the parts, that the splinter might have reached the upper part of the nasal fossa. After etherizing the patient, with a pair of dressing forceps search was made high up in the nose, on a level with the inner canthus. Here a portion of the splinter was felt and grasped, and with some effort a piece of wood about two-thirds of an inch long was dislodged and brought out of the nose. On washing it, it was concluded that it could not be the entering end of the splinter; so the forceps was again introduced, and another piece, which seemed to be imbedded in the septum narium, was worked out in an opposite direction from that used in removing the former piece; on washing it and adding it to the two other pieces, it was thought the entire splinter was secured. The nose was then gently washed with a solution of borax in warm water, and the operation was completed.

The patient was put to bed with the eye lightly bandaged, after an examination which permitted the hope that the splinter had passed over the eyeball without seriously injuring it.

There was no fever and no suppuration. The wound united by first intention, and in a few days the boy was up and apparently perfectly well.

The entire splinter was about two and a half inches long and tapered from one-third of an inch square at the largest part to a point.

DR. J. HENRY C. SIMES read a paper upon

THE REMOVAL OF THE OVARIES AND TUBES,

and reported two cases. Both presented analogous symptoms demanding operation, which was, however, followed by dissimilar symptoms.

Mrs. X., twenty-seven years old. The family history was good. She had had no serious sickness; menstruation began at thirteen years of age; she was always regular and did not suffer more than usual, never going to bed. She was married at twenty-one years of age, but had had no children and no miscarriages. Her health remained remarkably good until three years ago, when she first experienced pelvic pains and tenderness over the region of the left ovary; at the same time there was a very profuse discharge of a "yellowish-greenish matter," which has continued more or less since. Shortly after the attack of pelvic pains she began to have difficulty at her menstrual periods; there was considerable pain, and the flow of blood was much increased. The latter gradually increased to such an extent that she was compelled to remain in bed a week or ten days at each menstrual period. She became much reduced in health, unable to leave her bed, and was steadily losing ground; the profuse hæmorrhage, which occurred at each menstrual period, was fast exhausting her, and she was willing to submit to any treatment which offered a chance of relief. In consideration of the previous history and treatment, there only remained the removal of the ovaries. The ovaries with their tubes were removed, some difficulty being experienced in the separation of the organs on account of dense adhesions to the pelvic fascia. The tubes were enlarged about three times their normal size; the ovaries, to the naked eye, presented nothing pathological. The uterus was very firmly bound down by adhesions. Owing to the hæmorrhage, due to the tearing of the numerous adhesions, it was thought best to insert a glass drainage-tube.

The second case was that of K. Y., twenty years old, unmarried. There had been previous good health, until two or three years ago, when there occurred an attack of pelvic pain, accompanied with vaginal discharge. Subsequently, there was painful and profuse menstruation, which continued to increase in spite of medical treatment, until the patient became exhausted. The ovaries and tubes were removed. The adhesions were less extensive than in the first case, and there was not the same difficulty experienced in the removal of the organs. The bleeding not being so great, it was not thought necessary to employ a drainage-tube. The removed ovaries presented nothing abnormal macroscopically; the tubes were increased to about three times their normal size.

In the subsequent history of these two cases it is to be noted that, although the symptoms were in both quite analogous, and the operation presented local conditions apparently similar in both, yet the course of the cases and the symptoms which developed during convalescence were very dissimilar.

In the second case reported, nothing unusual occurred—in fact, the patient made a rapid and satisfactory recovery, not only from the operation, but also from the symptoms for which the operation was performed. More than two years later she was in excellent health. Menstruation had not returned.

In the first case the drainage-tube was removed on the third day after the operation; the wound healed kindly; however, on the fourth day after the operation the patient appeared somewhat excited and evinced a desire to talk; although quite rational, her conversation was a

little rambling. This was thought to be due to the excitement attendant upon an operation done in the general ward of a hospital, and the patient was removed to a private room. Her nervous state, however, did not improve; the following day decided delirium developed. She remained in the hospital six weeks, and during that time there was no abatement in the symptoms. The insanity continued and there was some deterioration of the physical condition. The patient was now taken to an insane asylum. After two months' detention she returned home with her mental faculties completely restored, although still feeling the effects of the severe nervous shock she had experienced. Menstruation returned for the first time, quite profusely, four months after the operation; three months later there was another hæmorrhage, also quite large; and again two months later there was a slight hæmorrhage; since then there has been no more bleeding. Occasionally, a sharp uterine pain is felt; otherwise there are no local symptoms. The physical condition of the patient is good and she is gaining flesh. She states, however, that her mental condition is not what it was prior to the operation; she is not able to think as she formerly did, at times becoming very much confused; there is a great tendency to sleep; she has lost her ambition for work, and is inclined to melancholia, with much depression of spirits; reading soon tires her and she has no taste for amusement.

In comparing these two cases, symptomatically and pathologically identical, the question that naturally arises is this: Why should one case progress to recovery without a single unfavorable symptom and the other develop a most serious complication? It is reasonable to inquire: Is it possible to form a prognosis, when such analogous cases pursue such opposite courses?

In answer to the first question, it is difficult to give any reasonable explanation, except to say it was due to a peculiarity of the patient herself, a so-called idiosyncrasy, which is a confession of ignorance. The slight excess of hæmorrhage in the one case may have been a possible cause for the complication. While admitting this as a possible cause, the excess was so slight it is scarcely probable.

CORRESPONDENCE.

THE OBSTETRIC CLINIC OF THE UNIVERSITY OF MICHIGAN.

To the Editor of THE MEDICAL NEWS,

SIR: Three years ago the Regents of the University made it possible to establish an obstetrical clinic at this University, and since that time not a student has graduated from the Medical Department without having an opportunity for actual experience at the bed-side of lying-in patients, either under the supervision of myself or of my assistant, Dr. Lynds. Notwithstanding our classes are large and the students of the section make at least two examinations during each labor, there has not been a case of septicæmia during the past three years, and the patients have left the hospital each well satisfied with her treatment. The method adopted in the treatment of these cases is as follows:

The house physician keeps a list of the names and

residences of all senior students arranged in sections. So soon as a patient is reported by the nurse to be in labor a messenger is dispatched to the members of the section to which that case belongs. If any student of that section has of late been assisting in post-mortem work or has been with scarlet fever patients, etc., some member of another section takes his place. For final preparation the students thoroughly scrub their nails, hands and arms with brushes, soap and water, and then wash themselves carefully with 1:1000 bichloride of mercury solution. They are watched by my staff to see that the examining hand does not become contaminated before the examination is made.

In the meantime the patient is given a douche of sterilized water and carbolic acid, the vulva is washed with bichloride solution and all clothes placed about the patient have been sterilized. When ready for the examinations the patient is placed upon the bed, a drop-curtain shielding her from the view of all except the attending physicians. After the presentation has reached the perineum the parts are sufficiently exposed to demonstrate the delivery. The child is washed and dressed by one of the section, under the supervision of a nurse.

After confinement the patient is given douches of warm, sterilized (thoroughly boiled) water, twice daily. Many of these patients are nursed by the students under the direction of the ward-mistress.

J. NELSON MARTIN.

UNIVERSITY OF MICHIGAN,
ANN ARBOR, JUNE 5, 1891.

NEWS ITEMS.

THE Treasury Department has decided that a statue of the late Samuel D. Gross, which the American Surgical Association proposes to erect at Washington, D. C., may be admitted duty-free.

Parkin Prize of the Royal College of Physicians of Edinburgh.—In accordance with a bequest by the late Dr. John Parkin, the Royal College of Physicians of Edinburgh has offered a prize of one hundred pounds sterling for the best essay upon "The Curative Effects of Carbonic Acid Gas or Other Forms of Carbon in Cholera, the Different Forms of Fever, and Other Diseases." The competition is open to all nations. The essay must be written in English, and be received by the Secretary, G. A. Gibson, M.D., not later than December 31, 1892. Each essay must bear a motto, and be accompanied by a sealed envelope bearing the same motto on the outside and the author's name within. The successful candidate must publish his essay at his own expense, and present a printed copy of it to the College within three months after the adjudication of the prize.

Tulane University.—The wife of Dr. T. G. Richardson has donated \$100,000 to the Medical Department of Tulane University, New Orleans, for the erection of a new college building.

Milwaukee.—The Milwaukee Clinical Society has changed its name to that of the Milwaukee Medical Society, and is endeavoring to enlarge the scope and

membership of the Society. It has elected Dr. S. W. French as President, Dr. U. O. B. Wingate as Secretary, and a board of thirteen Councillors, who have the general management. It will hold two meetings per month, on the second and fourth Tuesdays, except the months of July, August and September.

Medico-legal Society of Chicago.—At the annual meeting of the Medico-legal Society of Chicago, held at the Grand Pacific Hotel, June 6th, the following officers were elected for the current year: President, Judge O. H. Horton; Vice-Presidents, Drs. D. R. Brower and James Barry; Treasurer, Dr. Joseph Matteson; Secretary, Dr. Archibald Church.

Delaware State Medical Society.—At the one hundred and second annual session of the Delaware State Medical Society, held at Georgetown, June 9, 1891, Dr. Joseph H. Chandler was elected President; Dr. Ezekiel W. Cooper, Vice-President; Dr. William C. Pierce, Secretary; Dr. Oliver D. Robinson, Treasurer. Delegates were elected to the American Medical Association and to the Medical Society of the State of Pennsylvania. Dr. E. E. Montgomery and Dr. Mary Fisher, both of Philadelphia, read papers and were elected honorary members of the Society. The next meeting will be held at Dover.

Illinois State Board of Health and Medical Education.—The Secretary of the Illinois State Board of Health has issued the following circular to the principal teachers and to the educational institutions of the country:

DEAR SIR: There is a demand from medical teachers and young men who intend to study medicine for a literary course preparatory to the study of medicine. This demand has been met by a few of the literary institutions in the United States, and it is hoped and believed that it will be much more generally met during the next two years. The following institutions now offer science courses for students who intend to study medicine, or who intend to teach or otherwise engage in biological work: 1, University of Wisconsin; 2, University of Pennsylvania; 3, Johns Hopkins University; 4, University of Notre Dame; 5, Yale University; 6, Cornell University; 7, Princeton University; 8, Lake Forest University; 9, Northwestern University; 10, West Virginia University; 11, University of Kansas.

As must be obvious, such a course should be based on biology, and should include thorough work in this science, as well as in osteology, comparative anatomy and chemistry, with English, French, German, some Latin, clay-modelling, free-hand drawing, mineralogy, mathematics, thorough trigonometry, mechanics, logic, general and pharmaceutical botany, and (in the last year) psychology. It is, of course, understood that botany, being a branch of biology, should have a prominent place in the course.

The catalogues of the universities mentioned contain the lists of studies offered in their science courses.

Such a course should extend over four years. This will involve no loss or waste of time to the student. The Illinois State Board of Health now requires that students of medicine matriculating in the autumn of

1891 or thereafter must study medicine four years and must attend three courses of lectures—no two in the same twelvemonth—in order to obtain a license to practise in Illinois. This rule will apply also in some other States. The Illinois State Board will, however, recognize a thorough course in science, such as indicated above, as equivalent to two years' study and one course of lectures, thus enabling the student to enter the second class in the medical college. This makes the full time of study in the literary and medical schools six years, or two years less than is required of the student pursuing a strictly classical course. Not only will time thus be saved, but the science student will be much better prepared to enter the second course of the medical school than will the classical student to enter the first year.

The Illinois State Board wishes to make up a science course that can be recommended to any college wishing to adopt such a course, and having but little time to study the subject, I desire to enlist your aid and have your advice in the matter, so as to make the course as practical and as beneficial as possible. Will your Faculty, therefore, make out such a course as it thinks best for the purpose, and send it to the Secretary of the Board.

The demand from medical teachers and from students of medicine, having been met by some universities, must be met by all who would continue to hold a high rank as educators of young men for the work of life.

Respectfully, JOHN H. RAUCH, M.D., Secretary.

Frederick P. Henry, A.M., M.D.—The many friends of Dr. Henry will be gratified to learn that at the last commencement of Princeton College the honorary degree of Master of Arts was conferred upon him. The selection is excellent and the honor well merited.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 13, 1891.

ALFRED, A. R., *Assistant Surgeon*.—Detached from Naval Hospital, Norfolk, and ordered to the "Fern."

STOUGHTON, JAMES, *Assistant Surgeon*.—Ordered to duty at Naval Hospital, Norfolk, Va.

YOUNG, L. L. S., *Assistant Surgeon*.—Ordered to duty at Naval Station, Port Royal, S. C.

HOCHLING, A. A., *Medical Inspector*.—Ordered as a member of Naval Medical Examining Board.

STREET, T. H., *Surgeon*.—Ordered to duty on the U. S. S. "Bennington."

WALES, P. S., *Medical Director*.—Ordered as delegate to represent the Medical Corps of the Navy, to the International Congress of Hygiene and Demography at London, Eng.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

Address the Editor: GEO. M. GOULD, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.